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MAY, 1984

85p

TYPE-IN GAMES PROGS



DREAM RIG

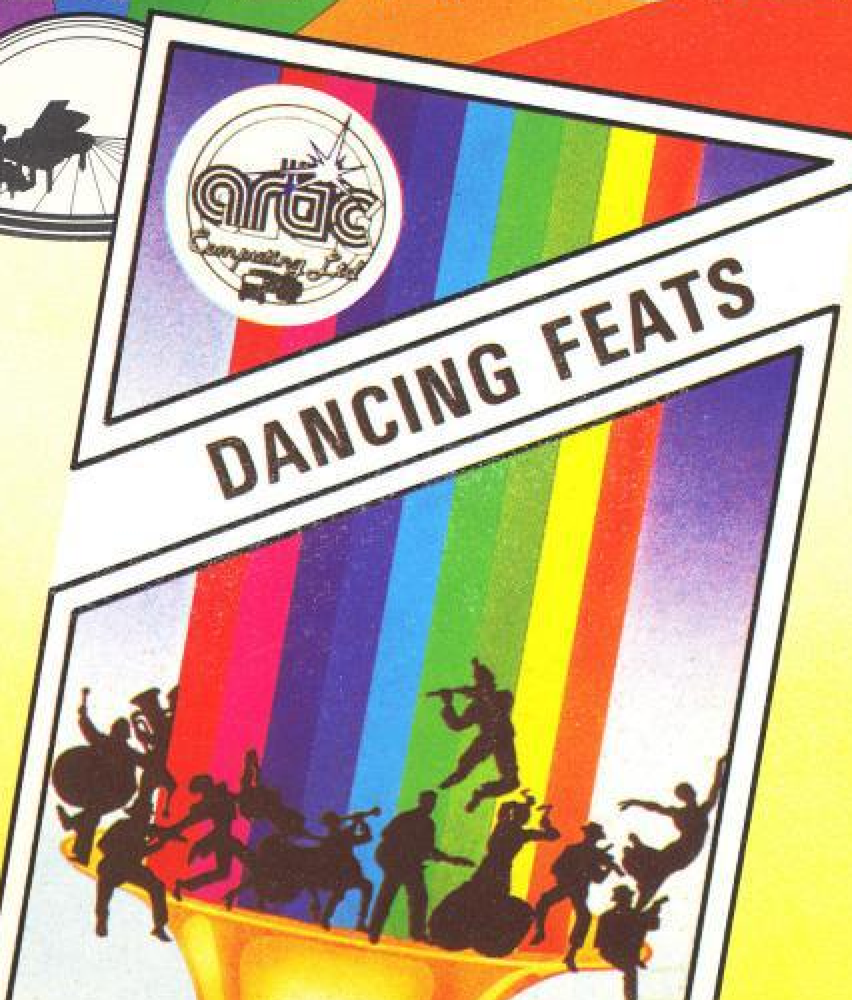
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Editor: TONY TYLER. Assisted by: RICHARD BURTON. Contributors: PAUL WALTON (Features); PAUL RAMBALI (Arcades); ANDY GREEN (Technical); JENNY PARROT, JOHN MAY, STEVE KENTON, DAVE RIMMER, RICHARD TAYLOR, BERNARD TURNER, DAVID ELLIS, DAVE EASTBURY, TONY BENYON. Art/Design: CENTRAL ART STUDIO. Group Art Editor: DOUG CHURCH

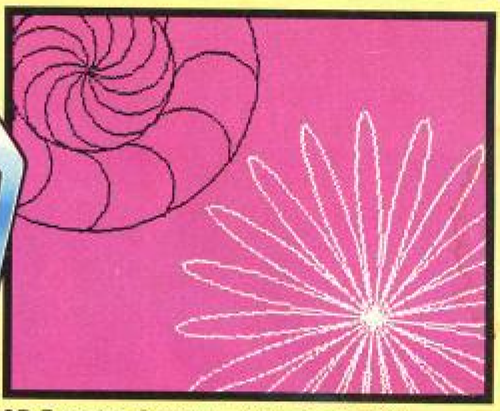
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BIG K



Wot about a bit of British Orc? (p.48)



3D Rotating Spectrum Graphics (p.76)



Ongoing Review Situation (p.24)

Editorial Address: BIG K,
Room 2026, IPC Magazines Ltd.,
King's Reach Tower,
Stamford Street, London SE1 9LS.
Telephone: 01-261 6604/6249

Advertising: Robin Johnson
01-261 5119



Computer War is Hell (p.72)

DROP MONEY, TAKE MAGAZINE

SOME OF the best computer games are the games we play WITH games. Sorting them into families, tracing lineages, working out how far into space all the Kong games would stretch if laid end to end . . . it's fun, and it fills an hour or two.

Nonetheless in the end there really are only two categories: one is that vast group where (to quote from elsewhere in this issue) "blocks of colour hit each other". The other is called Adventure. Few of you will have come this far unscathed by this branch of computer fantasay — THE branch, as its aficionados swear. Adventuring traces its origins theough role-playing board games, which in turn were stimulated into existence by fantasy literature; which itself has a long and noble pedigree (ask any Elf). Yet isn't it curious that so many Adventure plots are set in the same ageless mediaeval universe (caves, trolls, treasure, and the like)? We'd be interested to hear from anybody who thinks he knows why.

Meanwhile, have a crack at ADVENTURE X (p.50) If you suffer from Digit Fidget, tale it in easy bite-sized portions.

TONY TYLER

Contents

GULPO!

You know how these things happen. Bugs kind of, y'know, creep into the system. In last month's ish we published SAVE THE CITY. We said it was for CBM 64. When all the time it was for, er, Vic-20.
The culprit has been shot.

This Month's Freebie...



is a full-blown course in groovier game graphics, all on a 7" Flexidisc. Just off-load to tape, LOAD and RUN. Full info p.11.

Next Month in BIG K

MODEM LIVING: plug in, power up, and tap. Right? Wrong.
PETER SHELLEY: ex-Buzzcocks guy sounds out the music progs.
THIS YEAR'S CHIP? The 68000 gives 32 bits of bliss. We check it out.
ATARI 800XL: latest salvo in the under-£300 war. We review it.
PLUS TYPE-IN GAMES LISTINGS; REVIEWS; LETTERS and MUCH, MUCH MORE.

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The Long Good Friday.

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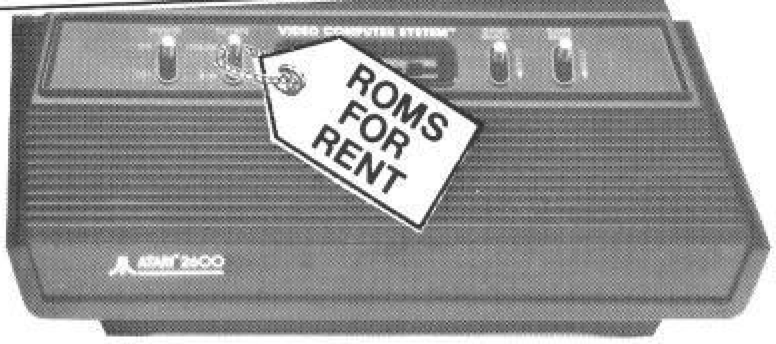
That's two great Activision games for the price of one – twice the action, twice the playing time. And that adds up to a very long Good Friday. And Saturday. And Sunday. And Monday...

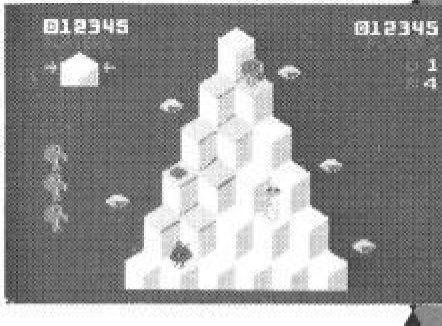
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U.S.GIANTS TARGET SPECTRUM





WATCH OUT, there are hungry eyes gazing at your Sinclair Spectrum! Having picked clean the bones of the dedicated video game market, three of the world's biggest video game companies are now looking for fresh meat.

AT THE British Toy and Hobby Fair held in London earlier this year, biggies Atari, Activision and Parker all announced Spectrum versions of their top-selling titles which will be available in the coming months.

Parker raised several eyebrows by displaying ROM cartridge versions of their games utilising the comparatively new Sinclair Interface 2 — they estimate around 300,000 will be in use during 1984. Atari and Activision have opted for the standard cassette-based software.

As of going to press the situation looks like this: Atari are first off the mark with Spectrum editions of *Pac Man, Galaxian* and *Ms Pac Man*, on sale now or very soon. Each cassette carries a hefty price tag of £14.99 and it remains to be seen if the punters will pay such a high price for the original, 'official' versions of games that have already spawned hundreds of clones in the existing software market. (See 'Hands Off Atarisoft' item below.)

Parker have listed *Death Star Battle, Q*Bert, Popeye, Star Wars* and *Gyruss* as their initial offerings for the Spectrum. All will be on cartridges which will plug into the Interface 2.

Only Activision are keeping tight-lipped about their first Spectrum titles. *Big K* speculates that these must include the enormously successful *Pitfall, River Raid* and *Kaboom*. Again, no pricing as yet for the cassette format software.

HANDS OFF ATARISOFT

Having finally woken up to the fact that there are a lot of different home micros about, Giant Atari is thundering into the software arena sowing terror wherever it goes.

Through its new Atarisoft division it is targetting Spectrum, BBC, Electron, Commodore 64, VIC 20 and TI-99/4A machines with official versions for most of arcade superstars *Pac-Man, Defender, Dig Dug, Donkey Kong, Galaxian*, et al.

With the release of the first Atarisoft titles, Atari have intensified their efforts to stop people ripping off their ideas.

Most of the big software houses have been informed by letter, in very clear terms, exactly which games Atari own or have exclusive rights to (*Battlezone, Moon Patrol, Defender*, etc) and that they will take legal action to stop anyone who, ". . . imitates the name, gameplay or graphics", of any of their properties. Since this potentially affects about 60 per cent of the micro games market it was no understatement when one major software house was heard to exclaim, "This'll put the cat among the pigeons!" Smaller software houses, on the other hand, who did not receive the letter were heard to say, "Hey! What about us?"

WHO WANTS TO BE A MILLIONAIRE? (WE DO!)



"There's a good guarantee that the winner could enter the millionaire class." So said Mark Eliot, the brains behind the mega-big **International Video Game of the Year** competition which has been running since earlier this year.

No small-scale operation this, the competition is open to anyone who can program a home computer game in over 20 different countries around the world. The winning game will be marketed throughout the computer-literate world through various software houses and for most micros. Not only that but the winner will be announced on a big TV spectacular which will be produced by Mark ('agent of the stars') McCormack's International Management Group, who are also responsible for the "Superstars" TV series. "The programme will be a celebration of micros and games," said Mark Eliot. "We hope it will become an annual event — like 'Miss World'!"

In addition to getting his (or her) mug on TV the winner will get $100,000 (around £70,400) in cash plus 10 per cent of world sales of the winning game. While not quite in the million earner class from that game alone, Mark is confident that the winner will clear the Big Mill from subsequent games.

As of writing deals are still being made with leading software houses and other interested parties. The competition itself closes on May 31st so you've still got time to order that Porsche and choose what gown you'll wear on TV.

HOW MANY MACHINES MAKE SENSE?

Around a quarter of a million. That's the threshold figure believed to be used by giant U.S. video games company Parker before they consider transferring any of their games to a particular computer.

Parker is reportedly building up a 'stable' of British programmers, spurred on, no doubt, by the fact that the recalcitrant British youth spent £80 million on games software during 1983.

BUZBY GOES SOFT

British Telecom will soon be piping games software into up to 1 million homes in Britain that are currently hooked into Rediffusion's cable TV operation through a new service called ***Gamestar.*** *For £9.95 a month (plus a connection fee), subscribers to* ***Gamestar*** *will get a Spectrum which will act as a terminal and a choice of up to 20 games, five of which will be replaced each month. Spectrum owners will get discounts.*



CROOK START TO A DINKUM INCOME

Dateline: Australia. Gidday. Here in Aus, land of Melbourne House and *"The Hobbit"*, we don't do things by halves. You poms are always worrying about copyright on computer software and how to stop drongos ripping you off. We don't have that problem, not any more. There is no copyright on software.

In a case involving Yank company Apple Computer and a bunch of fellas over here who were making a look-alike micro, it was ruled that programs cannot be considered as "literary works" under the Australian Copyright Act of 1968.

Seems that literary works have to give "either information or instruction or pleasure in the form of literary enjoyment". Computer programs are just a load of mindless instructions that control the operations of a machine. Where's the "literary enjoyment" in that?

So if you've got a software copyright problem, give our wonderful Australian legal system a call. You'll never have to worry again. — ***Merv Wombat.***

SELF-STYLED 'House of Ideas' Marvel Comics have kerpowed their way into the micro market by signing a licensing deal with American software house Adventure International. The result of this cosmic collaboration will be a series of graphic adventures starring Marvel mega-stars Spider-Man, Captain America and The Incredible Hulk.

This titanic team-up marks the meeting of two of the most influential forces in popular culture in recent years: Stan ("Mr Presents") Lee, father of the Marvel-style of comic and Scott ("Mr Adventure") Adams, father of computer adventure games software, who heads Adventure International.



Graphics for the new games are being produced by Marvel's own team of Bullpen artists giving the adventures an 'authentic look'.

Mighty Marvel has already experimented with the video game field through Parker Video Games. Of two Atari VCS cartridges announced early last year only Spider-Man has appeared to date and his performance can be said to be less than spectacular. 'Nuff said?

The first of the new graphic adventures, ***The Incredible Hulk****, is due out in Britain from Adventure International (U.K.) Ltd. in May. It will appear in formats to fit most of the popular home micros.*

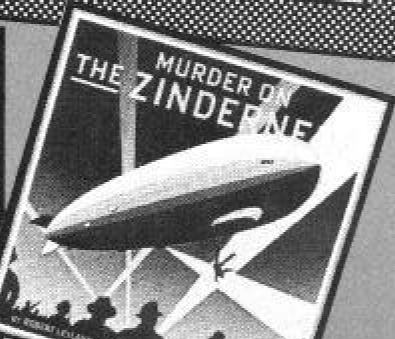
AND NOW . . . THE SORD M6!

PSST! WANNA buy inscrutable oriental games? Computer Games Ltd — sole distributors of that promising curiosity, the Sord M5 — are bringing in new Japanese games with titles even our character set can't handle. More to the point, far from giving up on the machine — which has been widely criticised for its lack of on-board memory — CGL have introduced their own-brand 32K RAMpack for slightly under £70. Not only that; CGL are also planning to incorporate the Sony 3" microfloppy system (as seen on the ACT Apricot) into the M5.

Our Upgrading Expert Writes: *CGL's move amounts to a well-thought-out rescue of this hi-tech machine, which has so far been hampered by a ludicrously low RAM and a discouraging price. The M5 has second-to-none sprite facilities and superb sound. Don't be surprised if it starts to gain acceptance from now on — though it would be better if the overall price could be inched down still further.*







THE PRISONER

THERE MUST BE WORSE WAYS OF PASSING THE TIME DEPT: You play the games, but how often do you check out the packing?

Connoisseurs of the macabre will be interested to learn that Rabbit Software's lovable-bunny packing is produced — commercially — by resident guests at HM Prison, Wormwood Scrubs.

Absolutely nothing wrong in this, of course. Companies are fully entitled to avail themselves of good business rates; and who would argue that packing software into lovable-bunny boxes is a better way for prisoners to pass the time than breaking rocks? It's just that . . . well, the reported leader of the packing team is none other than Dennis Nilsen.

Let's just check those games again . . .



CALIFORNIA CHURLS

ELECTRONIC ARTS™

"MAKE it Simple, Hot and Deep." We felt like offering a prize for the best explanation of this cryptic sentence, but our moral integrity got the better of us. So we can tell you that this is the official philosophy of U.S. West Coast games programmers, Electronic Arts.

Through classy advertising, slick packing and the use of big names in 'signatory software' (games supposedly conceived by the stars), EA have established quite an up-market image for themselves. They have also inspired an in-house solidarity that is rare in an industry where programmers change employers more often than they flip floppies.

Okay, you're desperate to find out the meaning of our opening remarks, According to EA, 'Simple' means that you can get into the program right away without the need for complicated instructions. 'Hot' means that the product " . . . Sizzles from hot graphics, hot sound and a tight design that pushes your computer to the limits!" (oh, grody to the max, man). And 'deep' means software that has lasting value and you'll enjoy for years, not days (fer sure, fer sure).

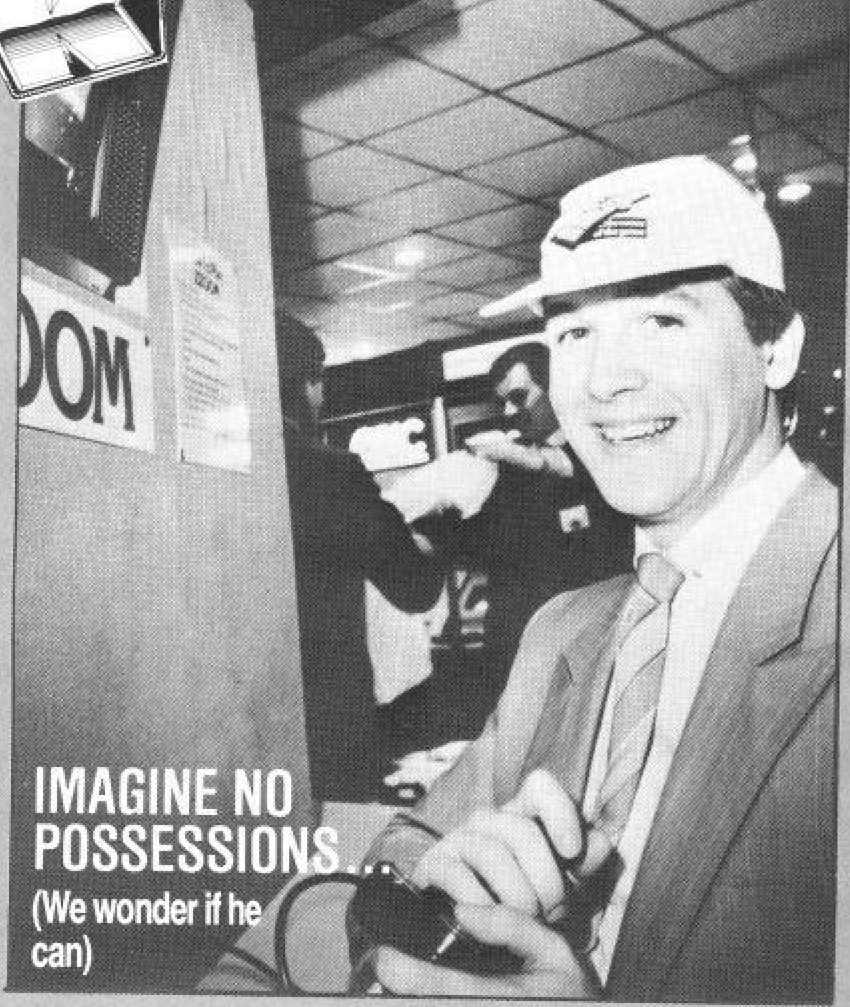
GET HIP — TAKE THE TABLETS

Graphic pads are going to replace joysticks as *the* hip peripherals of 1984, even if the choice is a touch limited.

Alone on the scene at the moment is Atari's *Touch Tablet* (made by U.S. West Coast manufacturer Koala, who promise a CBM 64 version soon), handicapped by lack of software — only Atari is supporting it at present.

Conversely, Suncom's *Animation Station*, due out later in the year (available in the UK from Consumer Electrics), is reckoned to be lining up a whole catalogue of ROM cartridges from painting to games animation.

John Sale of Consumer Electronics is sure of one thing, though: "The graphics pad is going to replace the joystick, especially at it comes down in price, enhancing the playabililty of most games. You can track objects across the screen to give much wider and faster character control."



IMAGINE NO POSSESSIONS...
(We wonder if he can)

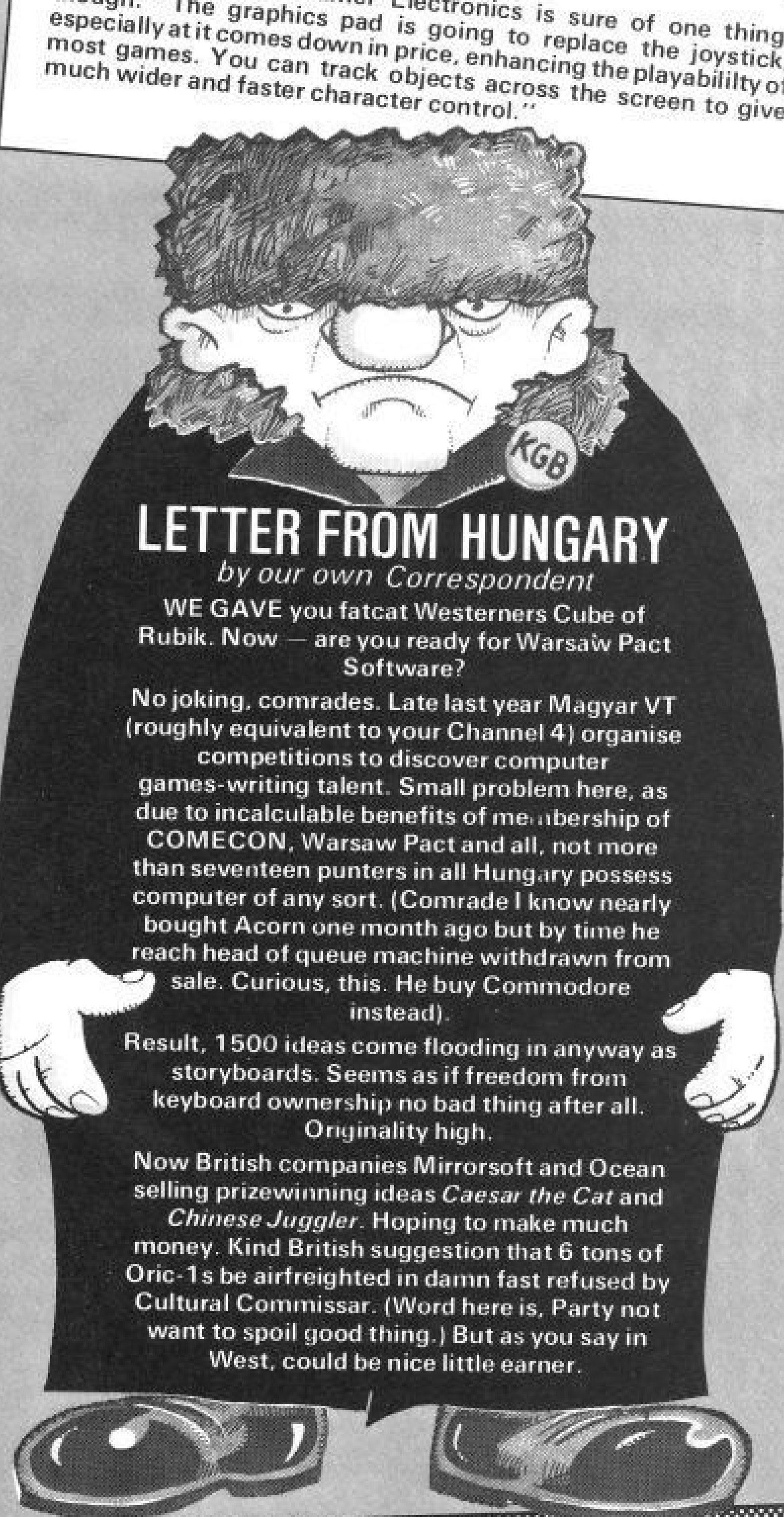
EIGHT MILLION pounds. That's what Liverpool-based software heroes Imagine coined last year, according to co-founder and 50 per cent director Mark Butler.

"Imagine's just a front," he told BIG K this month. "You don't see the half of what goes on below the surface. We're making a fortune. My only problem is spending my share."

A recent earner for the Scouse house has been the commission — from mighty Apple — to design the iconography of the newly-launched MacIntosh computer. In addition Imagine have finalised blueprints for a triple-6502 games machine to be built by A. N. Other and possibly launched later this year at a price roughly half of the Acorn/QL price bracket. Nor is laser technology neglected; the company has plans for a cheap laser-storage peripheral — again, to be manufactured by somebody else.

In between spending the money, Imagine are also expanding fast, says Butler. Another 35 staff are due to be added shortly — though not programmers. Butler emphasises that the so-called 'A Team' — six in all — plus the in-house Sage IVs — can handle all that line of work.

How does he, personally, spend his share of the folding (i.e. four Very Big Ones)? "I'm really into my custom-built Harris 1200 bike. You can do wheelies at 100 mph." Oh.



LETTER FROM HUNGARY
by our own Correspondent

WE GAVE you fatcat Westerners Cube of Rubik. Now — are you ready for Warsaw Pact Software?

No joking, comrades. Late last year Magyar VT (roughly equivalent to your Channel 4) organise competitions to discover computer games-writing talent. Small problem here, as due to incalculable benefits of membership of COMECON, Warsaw Pact and all, not more than seventeen punters in all Hungary possess computer of any sort. (Comrade I know nearly bought Acorn one month ago but by time he reach head of queue machine withdrawn from sale. Curious, this. He buy Commodore instead).

Result, 1500 ideas come flooding in anyway as storyboards. Seems as if freedom from keyboard ownership no bad thing after all. Originality high.

Now British companies Mirrorsoft and Ocean selling prizewinning ideas *Caesar the Cat* and *Chinese Juggler*. Hoping to make much money. Kind British suggestion that 6 tons of Oric-1s be airfreighted in damn fast refused by Cultural Commissar. (Word here is, Party not want to spoil good thing.) But as you say in West, could be nice little earner.

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Big K needs you!
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Access our database and get user-friendly cash if we use your letter, listing or whatever! Fire up your CPU (brain-circuit) and act now. The address is on the contents page. We want to hear from you. It gets so lonely in these data banks!

GARBAGE IN, GARBAGE OUT

SOME PEOPLE will do anything to get even dept.; which former collabbo of **Jeff Minter** has released a new game with **Llamasoft**-style llamas getting offed by the central character? Answers on a postcard to **Interceptor Micros** . . . The above just the latest in a series of needles at the famed camelophile . . . Just where did **Rabbit Software** aquire their Microdrive? (Snigger, snigger) . . . **The Shadow** knows all, for he walks by night.

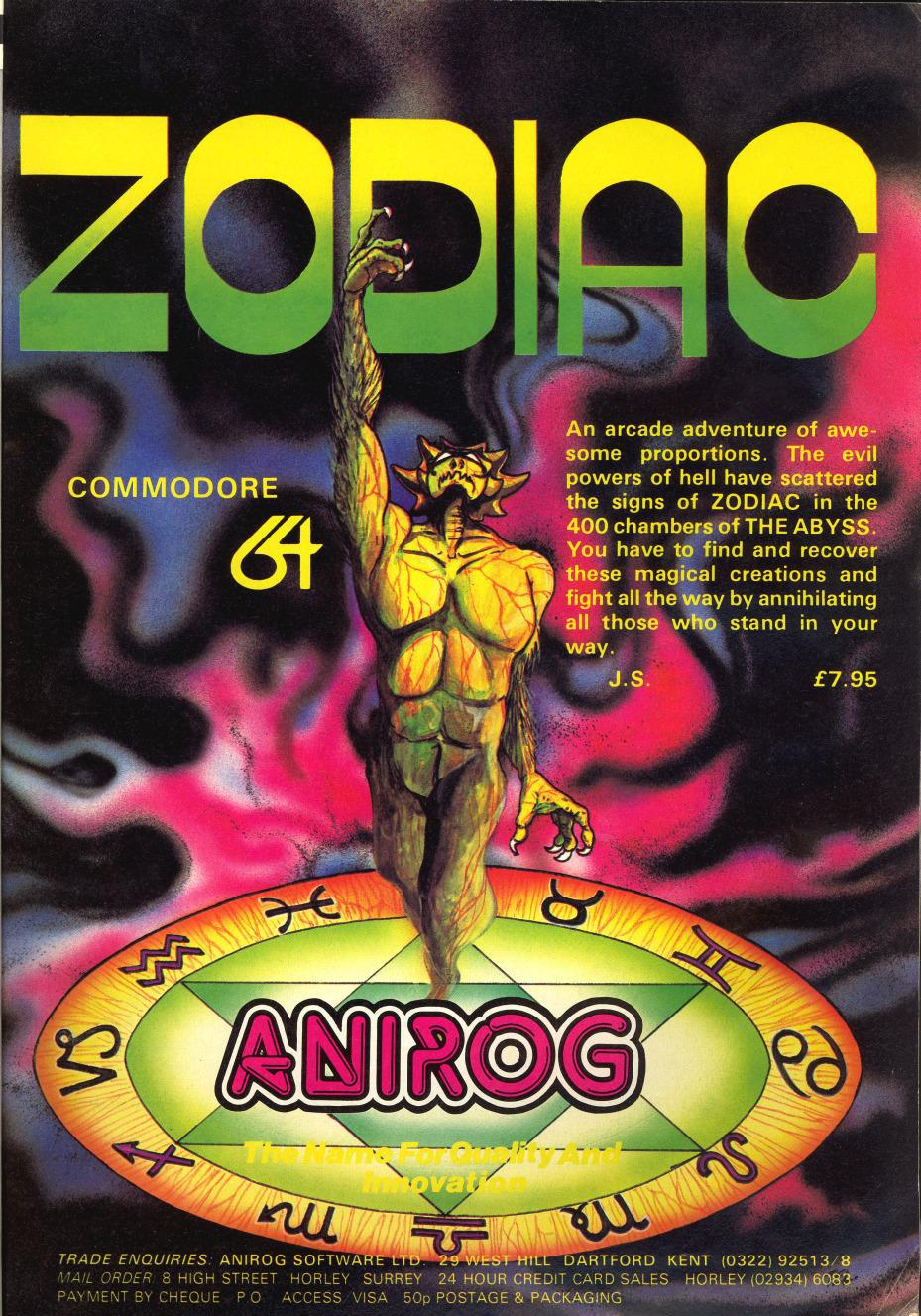
Now it can be told dept.: one of the directors of **Voyager Software** is **Roy Butler**, paterfamilias of the Family Butler, which includes motorbike-loving **Mark**, of **Imagine** fame . . . and what newish company has now taken nervously to ringing round 'puter mags to check out the nature of upcoming reviews before sending more software out?

Arcade addicts may (or, then again, may not) be interested to learn that **Gyruss** (a raster-scan version of **Tempest**) was designed and coded by those wizards of the binary digits, **Ultimate** . . . Speaking of whom, don't be madly surprised to see a 64 version of **Jetpac** soon available . . .

Overkill City: **Softek's Tim ("The Doc") Langdell** assures us that a new upcomer from him will contain 66 levels of play, thus easily thrashing **Minter's Revenge of the Camels** (42) . . .

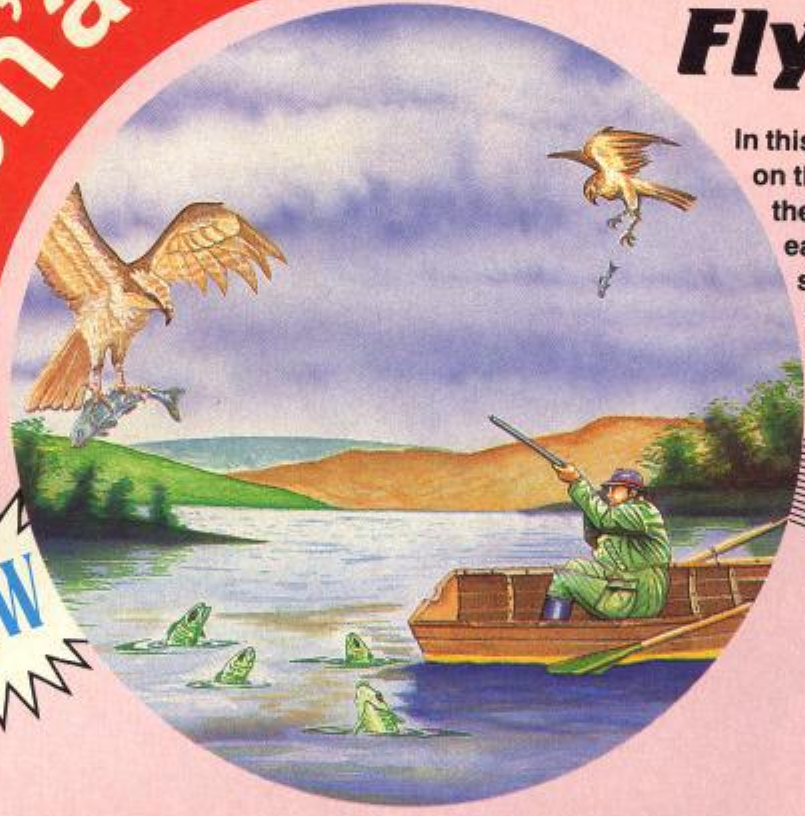
Norris McWhirter writes: Yes, **Roy**, what our young friend says is perfectly true: if **Langdell** pulls it off, he *will* beat **Minter**, though mention should be made here of a little-known Caucasian shepherd who is alleged to have re-scored the original **Super Pongout** for no less than 256 levels, this making fullest use . . . Yes, yes, **Norris**, thank you . . .

THE SHADOW


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Flying Feathers

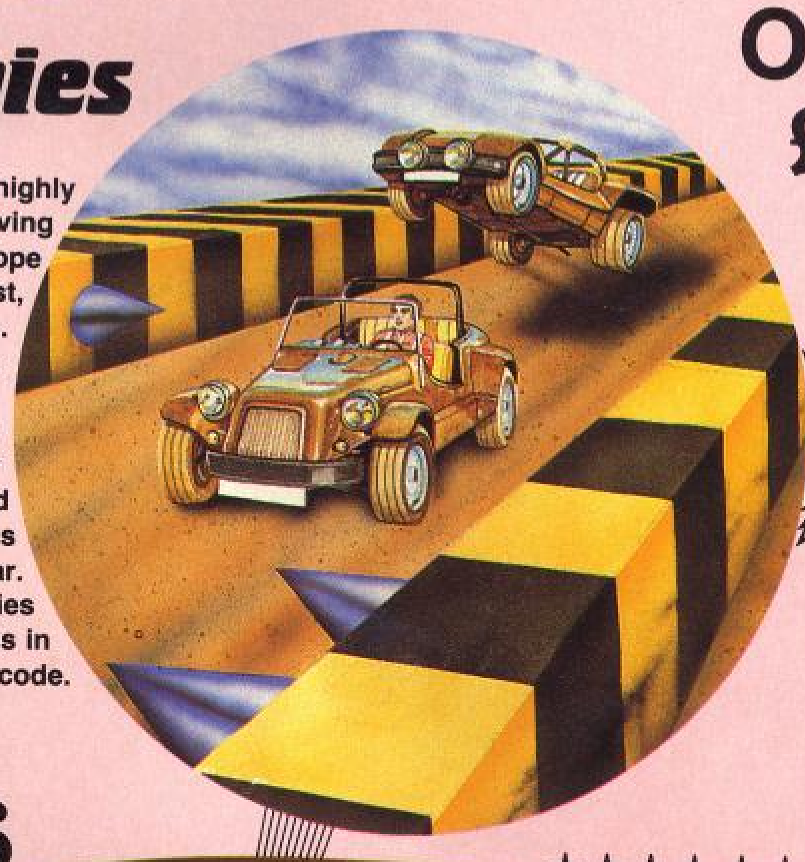


NEW

In this highly original game you are the gamekeeper on the lake trying to stop greedy eagles taking all the fish. Two different methods with 4 skill levels each are available for your shot gun. Specially scored music with freeze frame ability, and for the technically minded 10 sprites (yes, that's right, there are only 8 on the 64).
High scores kept.
All machine code.



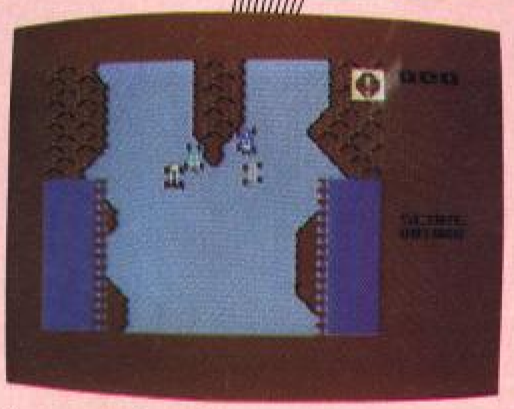
Bumping Buggies



Thrills and spills is what you'll get in this highly addictive motor racing game. You'll be driving over some pretty hazardous terrain having to cope with lakes, islands, rock formations and, not least, other cars which are intent on making you crash. Luckily you can vary your speed and line and you have one ace up your sleeve – when you maintain a sufficient speed you can jump over obstacles to help you out of trouble. The track gets progressively more difficult with 20 different patterns and you have to cope with driving conditions in the four seasons of the year.
Like most bubble bus classics, Bumping Buggies has its own specially scored music and is in machine code.

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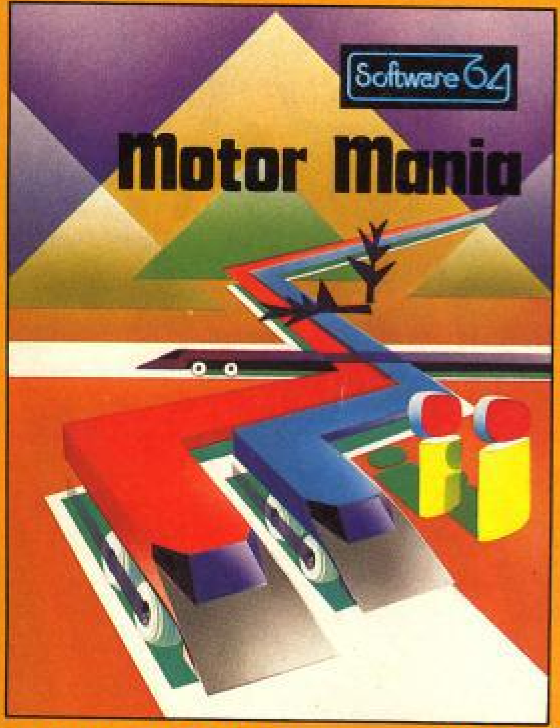
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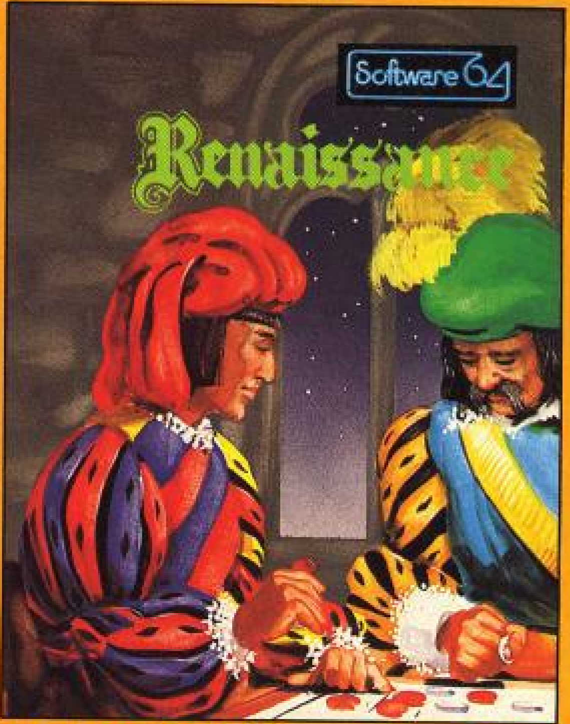
MACHINE CODE GAMES ACTION FOR THE 64

Software 64



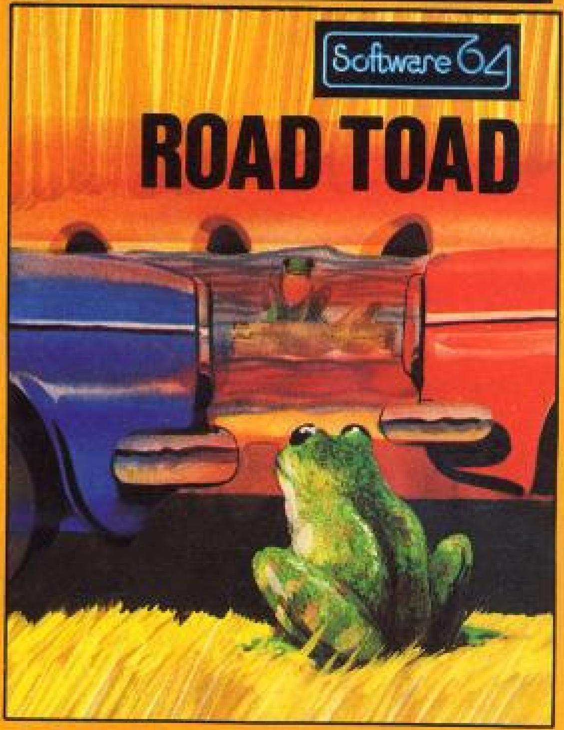
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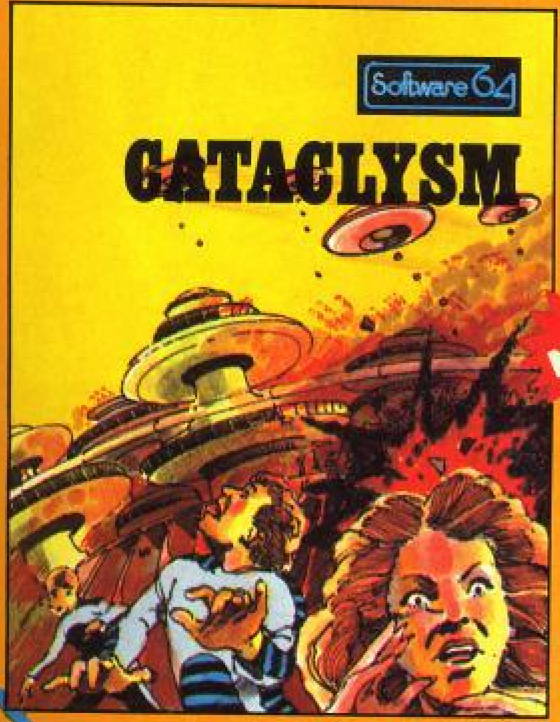
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THE BEST FROGGY GAME FOR THE 64 BAR NONE!



NEW

WORD FEUD £7.95

This brilliantly conceived program combines the best parts of arcade games with the best of educational games, making a real family game that anyone who can see the screen can participate in. You have to find the word that is hidden twice in the jumble of letters, then guide your sights over one of the occurrences of it.

The first to find it wins! You can play by yourself or in teams against the computer, or against other players. Three difficulty levels are included to suit young and old alike!





BONZO 64 £7.95

This best-selling game for the VIC-20 is now available on the 64! Featuring the most intelligent and devious monsters you have ever tried to avoid, the Bonzos, this game is a real joystick wrencher. Move Hans, the handyman, up and down the ladders to pick up the boxes from the different levels.

But don't meet a Bonzo on the way!

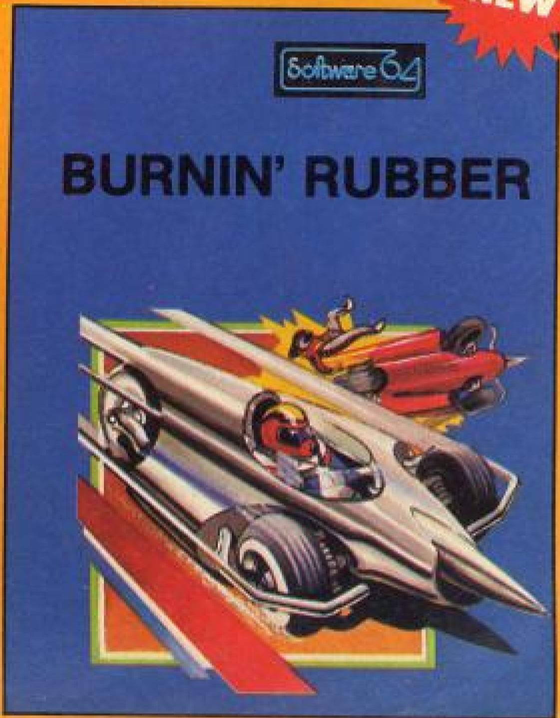
NEW

CATACLYSM £5.95

Pure shoot-em-up arcade action for the 64 and unexpanded VIC! The Lunar city of Erriam is under attack from the ships of the Jovian empire. Their merciless bombing will reduce your city to a pile of rubble, unless you can hold them off. You are the commander of the sole laser defence base. Your mission - hold out for as long as possible.

BURNIN' RUBBER

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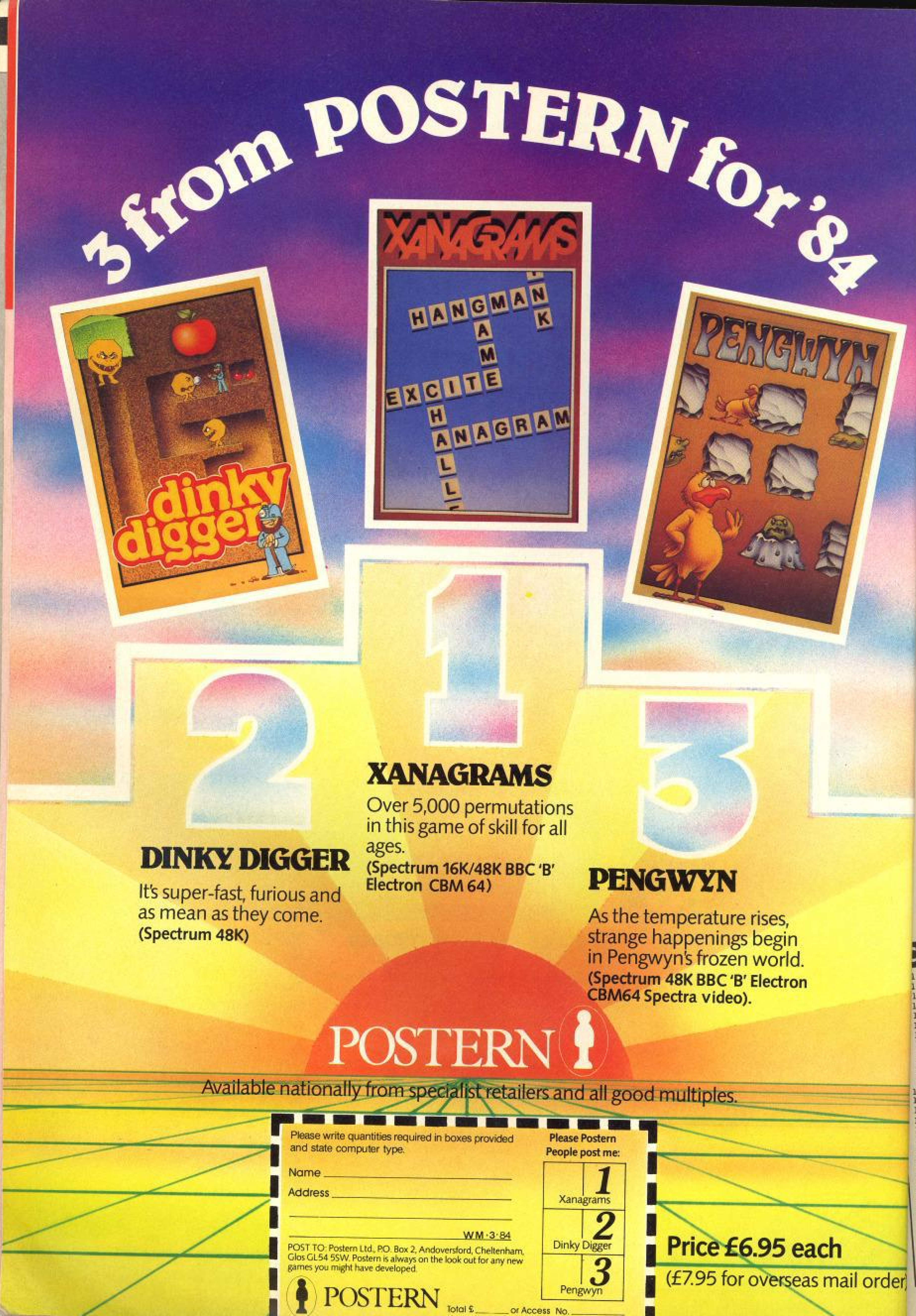
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This month's free gift marks a new departure in freebie quality. Instead of serving you up yet another clone of Frogger or Kong — as some other periodicals do — the Big K Flexidisc provides what amounts to a do-it-yourself course in advanced games graphics — particularly moving graphics, tilting horizons (no Flight Simulator is complete without these) and circle fills. DAVID ELLIS explains how to use the disc.



HOW TO USE YOUR FREE DISC

AFTER THE alien spaceship has smashed the bottles off the wall with its devastating laserbolt millions of times . . . and you have (coloured) circles in front of your eyes . . . and the TV screen doesn't look quite as straight as it once did . . . what next?

Whether you are the proud owner of a Sinclair Spectrum or a BBC microcomputer you have a wealth of information lying neatly behind the three programs. Delve into 'BOTTLES' and see how the alien invaders move so quickly and smoothly across the screen; see just how the bottles wiggle their way down the wall and crash to the ground. Find out how you can draw smooth round circles quickly with the 'CIRCLES' program. 'HORIZON' even gives you the first part of your very own Flight Simulator program! And it's all done in BASIC too . . . no fancy machine code to catch you out!

LIST the programs on the screen cr on a printer if you have one to see how the various animation effects are achieved. Use these simple graphics techniques in your own programs or even turn the alien spaceship into a Sherman tank! Have a go.

Bottling it all up

The System Software programmers have cleverly incorporated the major animation techniques used by BASIC programmers into this fast-moving game. These involve moving USER DEFINE GRAPHICS characters around the screen. The spaceship is made out of six character blocks and the bottles and wall are made up of several more characters. Each character occupies the same space on the screen as one ordinary letter. On the BBC microcomputer these special characters are defined using the VDU 23 command (lines 700-850). On the Spectrum they are define by POKEing numbers into special memory locations (lines 1000-11700.

Each of the User Defined Graphics Characters can then be PRINTed anywhere on the screen. The BBC program neatly arranges these characters in STRINGS (eg. SHIP$ for the alien spaceship) ready for PRINTing on the screen (lines 870-990). Note that CHR$8 and CHR$10 mean 'move the cursor back one character space' and 'move the cursor down one character space' respectively. The Spectrum program PRINTS the characters as lower case letters. Look at the way the spaceship is PRINTed as 'klm' and 'nop' in line 40.

Have you noticed that the spaceship is PRINTed with blanks either side of it? When the ship is moved across the screen by a small amount (always equal to or less than one character width) the trailing blanks of background colour cover its path. So it wipes itself out . . . simple isn't it? Animation done this way can be fast, even in BASIC.

The falling bottles cannot be animated in the same way as the spaceship because they 'wiggle' (by changing characters) and they must NOT WIPE OUT THE BRICK WALL! So the programs use another interesting technique called Exclusive-OR or XOR plotting. Don't give up yet; it's not as difficult as it sounds! It simply means that if we PRINT exactly the same thing TWICE IN THE SAME PLACE using this special way of plotting then the background will re-appear exactly as it was. Amazing isn't it but quite easy since the computer does all the hard work for us. The BBC microcomputer allows us to XOR plot with the GCOL statement (line 410). The Spectrum has the PRINT OVER command which does the same thing (lines 3020,3025). Remember that the bottle is PRINTed TWICE in exactly the same position and in exactly the same way before it is moved further down the wall.

One of the most useful tips for SMOOTH animation is the use of 'frame blanking' to prevent flickering of the moving object. This point is quite often ignored even in commercial programs! The TV screen is refreshed every fiftieth of a second and it is important to plot the WHOLE object everytime. In this program the PRINTing of the alien spaceship actually waits until the start of a new TV frame! It is so quick that we don't notice any delay. Again, the microcomputer comes to our rescue and has provided us with an easy way of 'frame blanking'. On the BBC we can use the Operating System command *FX19 (line 1260) and on the Spectrum we use PAUSE 1 (line 40). Remove these statements from your program to see how important they really are! These statements need to be placed carefully within BASIC programs because of the relatively slow execution speed. The best position is usually found by trial and error. In the BBC program the *FX19 command comes AFTER plotting the spaceship!

Broadening your horizons

The Tilting Horizontal program demonstrates the use of drawing lines in foreground colour to move the horizon down on the other. On the BBC this is achieved using the PLOT 1 and PLOT 3 commands respectively. The Spectrum program uses INVERSE 0 and INVERSE 1 in a similar manner.

Circle it

The CIRCLE program demonstrates how to fill a circle easily without resorting to the dreadfully slow but widely used SIN and COS functions. You might like to try and find a quicker way than this! Best of luck!

NB: The disc is NOT a floppy-disc. It runs on any record-player. You must play the disc and record its contents via direct link on to cassette. Then load the cassette into your Spectrum or BBC computer in the normal way (instructions for loading can also be found on the disc itself). LIST the programs to see the working.

CIRCLE

```
110 REM  ### VARIABLES TABLE ###
120 :
130 REM  NAME   !  USE
140 REM  ____   !
150 REM  F      !  FOREGR.COLOUR
160 REM  B      !  BACKGR.COLOUR
170 REM  R      !  RADIUS
180 REM  XC     !  CENTRE OF X
190 REM  YC     !  CENTRE OF Y
200 :
210 REM INPUT COLOURS,RADIUS
220 CLS
1000 INPUT "FOREGROUND COLOUR(0-3)",F
1010 INPUT "BACKGROUND COLOUR(0-3)",B
1020 INPUT "TYPE IN RAIUS",R
1025 IF R>512 OR R<0 THEN GOTO 1020
1030 MODE 1
1036 VDU 18,0,B
1037 REM DRAW BACKGROUND
1040 MOVE 0,1024 : PLOT 85,1280,1024
1050 MOVE 0,0 : PLOT 85,1280,0
1060 REM SET VARIABLES
1090 XC=640
1100 YC=512
1105 VDU 18,0,F
1110 FOR Y=0 TO R
1120 X=SQR(R^2-Y^2)
1130 PLOT 4,(XC-X),YC+Y:PLOT 1,X*2,0
1140 PLOT 4,(XC-X),YC-Y:PLOT 1,X*2,0
1150 NEXT
1160 GOTO 1000
1170 END
```

TILTING

```
230 REM   ### VARIABLES ###
240 :
250 REM   NAME   ¶   USE
260 REM   ----   ¶   ---
270 REM   C      ¶   FOREGR. COLOUR
280 REM   B      ¶   BACKGR.COLOUR
290 REM   Y      ¶   Y CO-ORDINAT
300 REM   XC     ¶   CENTRE X AXIS
310 REM   YC     ¶   CENTRE Y AXIS
320 REM   XL     ¶   LEFT END ON X
330 REM   XR     ¶   RIGHT END ON X
335 :
340 REM INSTRUCTION
345 CLS
350 PRINT TAB(7,10);"'ILTING HORIZON"
360 PRINT ""
365 PRINT "LEFT ARROW  : DOWN"
367 PRINT "RIGHT ARRW  : UP"
370 :
380 REM INPUT COLOUR
390 :
395 PRINT TAB(5,18)
400 INPUT "FOREGROUND COLOUR(0-16)",C
410 INPUT "BACKGROUND COLOUR(128-143)",B
420 :
430 REM INITIALIZATION
440 :
445 MODE 2
480 REM SET COLOUR
490 VDU 18,0,C
500 VDU 18,0,B
510 REM SET VARIABLES
520 XC=640 : YC=512
530 XL=-640 : XR=640
540 Y=0
550 REM DRAW MIDDLE LINE
560 MOVE 0,1024 : PLOT 87,1280,0
570 PLOT 87,1280,1024
580 MOVE 0,YC : MOVE 0,0
590 PLOT 85,1280,YC : PLOT 85,1280,0
600 :
610 REM  MAIN LOOP
620 :
630 MOVE XC,YC
640 PLOT 1,XL,Y : MOVE XC,YC
650 PLOT 3,XR,-Y+1: PLOT 3,XR,-Y
660 GOTO 740
670 MOVE XC,YC
680 PLOT 3,XL,Y+1 : PLOT 3,XL,Y
690 MOVE XC,YC
700 PLOT 1,XR,-Y
710 :
720 REM INPUT KEYS
730 :
740 IF INKEY(-26) THEN Y=Y-1 : GOTO 670
750 IF INKEY(-122) THEN Y=Y+1 : GOTO 630
760 GOTO 740
770 END
```

Tyburn

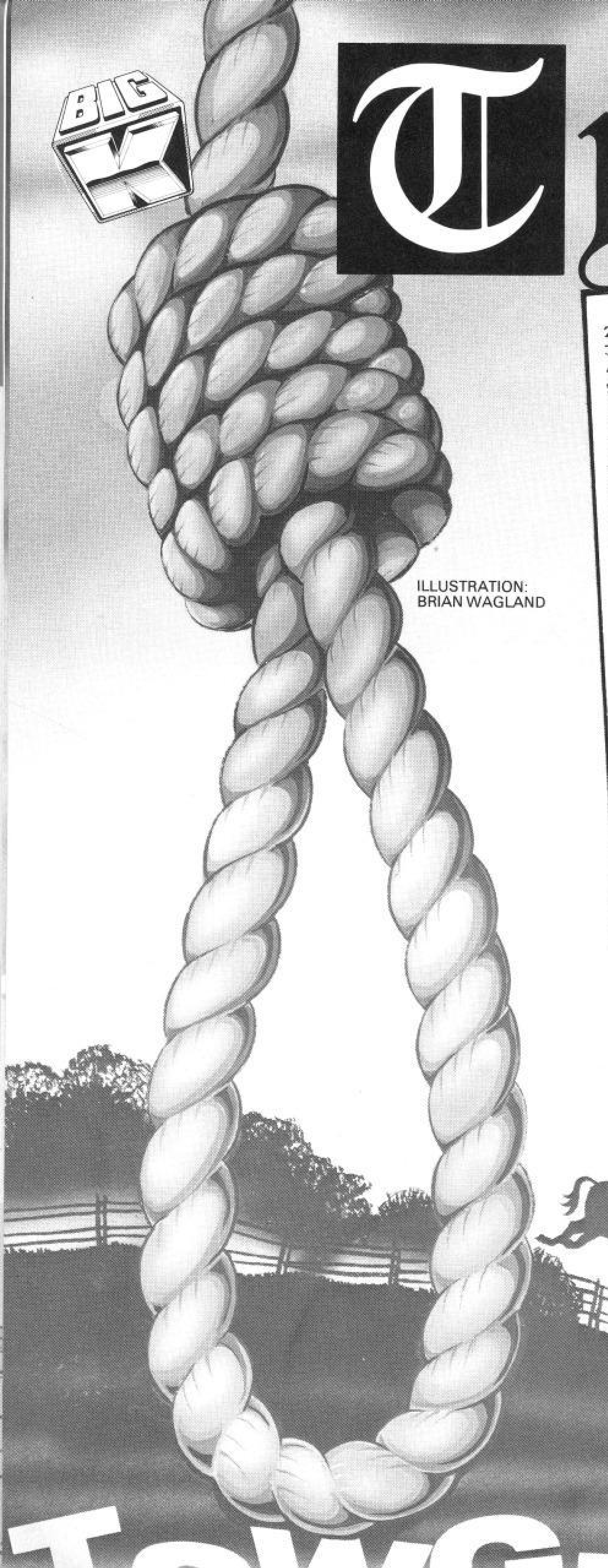


ILLUSTRATION: BRIAN WAGLAND

```
2 REM BY ALAN WOOD
3 REM TO CHANGE THE WORDS JUST
4 REM INSERT THEM AS LINES OF DATA
5 REM WORDS CAN BE UP TO 10 LETTERS
10 DIM I$(1),W$(10),A$(50),B$(50)
11 WIN=0:LOSE=0:H=6:G=15
20 DATA RAISE,RAISED,TRUNK,STRIKE
21 DATA CURE,SURE,PURE,PICTURE
22 DATA CAPTURE,DEFEND,DYING,LYING
23 DATA DREAD,DEAF,HEAVEN,PAID
24 DATA BUILT,BUILD,BUILDING,CONTENT
25 DATA BATTLE,RATTLE,CATTLE,TIRED
26 DATA KETTLE,BOTTLE,CORK,SORE
27 DATA RATE,FLAME,FRAME,SCRAPE
50 DATA CAT,ROAD,BREAD,BALLOON
60 DATA SCHOOL,BOOK,GIRL,PENCIL,DRAW
70 DATA BUTTER,SPOON,FORK,PILLOW
80 DATA LAST
90 U=U+1:READ W$:IF W$<>"LAST" THEN GOTO
90
95 RESTORE:REM COUNTS THE NUMBER OF
WORDS IN DATA
100 A$="#ABCDEFGHIJKLMNOPQRSTUVWXYZ#"
101 REM # IS REQUIRED OTHERWISE TO
SUBTRACT THE FIRST LETTER CAUSES AN
ERROR
110 GRAPHICS 1
120 S=PEEK(560)+PEEK(561)*256+4
125 POKE S-1,71
130 POKE S+2,7:POKE S+3,7
```

"You have been brought before this court suspected of terminal illiteracy and as a result are going to HANG, laddie, unless you can convince the bench that you can spell good.

"First: spell your own name . . ."

"Pass."

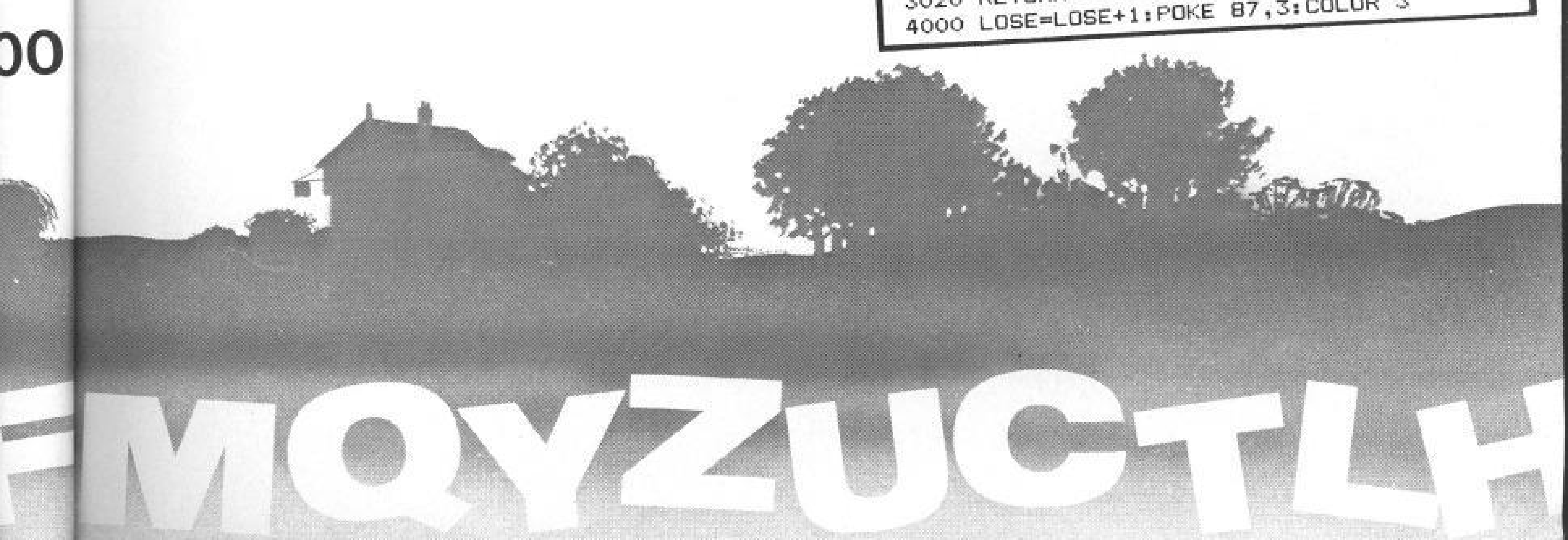
"Haul away, me hearties . . .

for ATARI 400/800

Tree

by ALAN WOOD

```
140 FOR W=6 TO 24:POKE S+W,8:NEXT W
150 POKE S+25,65:POKE
S+26,PEEK(560):POKE S+27,PEEK(561)
160 SETCOLOR 4,10,2
165 REM 110 TO 160 SETS UP DISPLAY
170 POKE 87,2:POSITION 2,0:?
#6;"hangman"
190 POKE 87,1:POSITION 0,3:?
#6;"LETTERS"
200 POSITION 2,4:? #6;"TRIED"
209 REM SELECT RANDOM WORD FROM DATA
210 FOR I=1 TO INT(RND(0)*U)
220 READ W$:NEXT I
221 FOR I=1 TO LEN(W$):POSITION 11+I,0:?
#6;"-";:NEXT I
230 X=8:Y=3:Q=0:R=0:P=0
249 REM REMOVE STRAY KEYBOARD INPUTS
250 POKE 764,255
300 IF PEEK(764)=255 THEN 300
310 OPEN #1,4,0,"K:":GET
#1.K:I$=CHR$(K):CLOSE #1:REM READS LAST
KEY PRESSED
320 FOR V=1 TO LEN(A$):IF I$=A$(V,V)
THEN
B$=A$(1,V-1):B$(LEN(B$)+1)=A$(V+1):GOTO
324:REM TAKES I$ OUT OF A$
321 NEXT V
322 GOTO 300
324 A$=B$
330 X=X+1:IF X=20 THEN X=9:Y=4
340 POKE 87,1:POSITION X,Y:? #6;I$
350 POKE 87,2
355 Q=P
360 FOR Z=1 TO LEN(W$):IF I$=W$(Z,Z)
THEN POSITION 11+Z,0:? #6;I$:GOSUB 2000
370 NEXT Z
374 REM CHECK IF WORD IS COMPLETE
375 IF P=LEN(W$) THEN 1600
380 IF P>Q THEN 300
410 FOR I=0 TO 150:SOUND 0,100+I,10,15
420 NEXT I:SOUND 0,0,0,0
425 POKE 87,3:R=R+1
430 ON R GOTO
500,600,700,800,900,1000,1100,1200,1300,
1400,1420,1430,1440,1450,1500
500 COLOR 3:PLOT 35,10:DRAWTO 35,23:GOTO
300
600 COLOR 3:PLOT 35,10:DRAWTO 28,10:GOTO
300
700 COLOR 3:PLOT 31,10:DRAWTO 35,14:GOTO
300
800 COLOR 2:PLOT 28,11:GOTO 300
900 COLOR 1:PLOT 27,12:DRAWTO
29,12:DRAWTO 29,13:DRAWTO 27,13:PLOT
28,14:GOTO 300
1000 COLOR 3:PLOT 26,15:DRAWTO
26,20:PLOT 27,15:DRAWTO 27,20:PLOT
28,15:DRAWTO 28,20:PLOT 29,15:DRAWTO
29,20
1010 PLOT 30,15:DRAWTO 30,20
1020 GOTO 300
1100 COLOR 2:PLOT 26,19:DRAWTO
30,19:PLOT 26,20:DRAWTO 30,20:DRAWTO
30,22:COLOR 1:PLOT 30,23:PLOT 31,23:GOTO
300
1200 COLOR 2:PLOT 26,21:PLOT 26,22:COLOR
1:PLOT 26,23:PLOT 25,23:GOTO 300
1300 COLOR 3:PLOT 25,15:PLOT
24,15:DRAWTO 24,19:COLOR 1:PLOT
24,20:GOTO 300
1400 COLOR 3:PLOT 31,15:PLOT
32,15:DRAWTO 32,19:COLOR 1:PLOT 32,20
1500 POKE 87,2:POSITION 3,1:? #6;"I WIN
 ";W$:LOSE=LOSE+1:IF LOSE>13 THEN
LOSE=0:H=H+1:GOTO 1700
1550 GOTO 1700
1600 POKE 87,2:POSITION 1,1:? #6;"you
win well done !":WIN=WIN+1
1650 IF WIN>13 THEN WIN=0:G=G+1
1700 POSITION 0,2:? #6;"press START to
cont"
1710 POKE 87,1:POSITION 0,3:? #6;"
SCORE"
1720 POSITION 2,4:? #6;"me  you"
1730 POKE 87,3:COLOR 2:PLOT 6,10:DRAWTO
6,23:PLOT 15,10:DRAWTO 15,23
1740 IF LOSE>0 THEN COLOR 3:PLOT
H,23:DRAWTO H,24-LOSE
1750 IF WIN>0 THEN COLOR 3:PLOT
G,23:DRAWTO G,24-WIN
1799 REM WAIT FOR START KEY
1800 IF PEEK(53279)<>6 THEN 1800
1825 RESTORE
1849 REM CLEAR SCREEN START AGAIN
1850 ? "↰":GOTO 100
2000 REM **SOUND FOR CORRECT ANSWER
2010 FOR I=1 TO 100:SOUND 0,I,10,I:NEXT
I
2020 P=P+1:SOUND 0,0,0,0:RETURN
3000 WIN=WIN+1:POKE 87,3:COLOR
3:POSITION YOU,23:DRAWTO YOU,23-WIN
3010 IF WIN=12 THEN WIN=1:YOU=YOU+1
3020 RETURN
4000 LOSE=LOSE+1:POKE 87,3:COLOR 3
```



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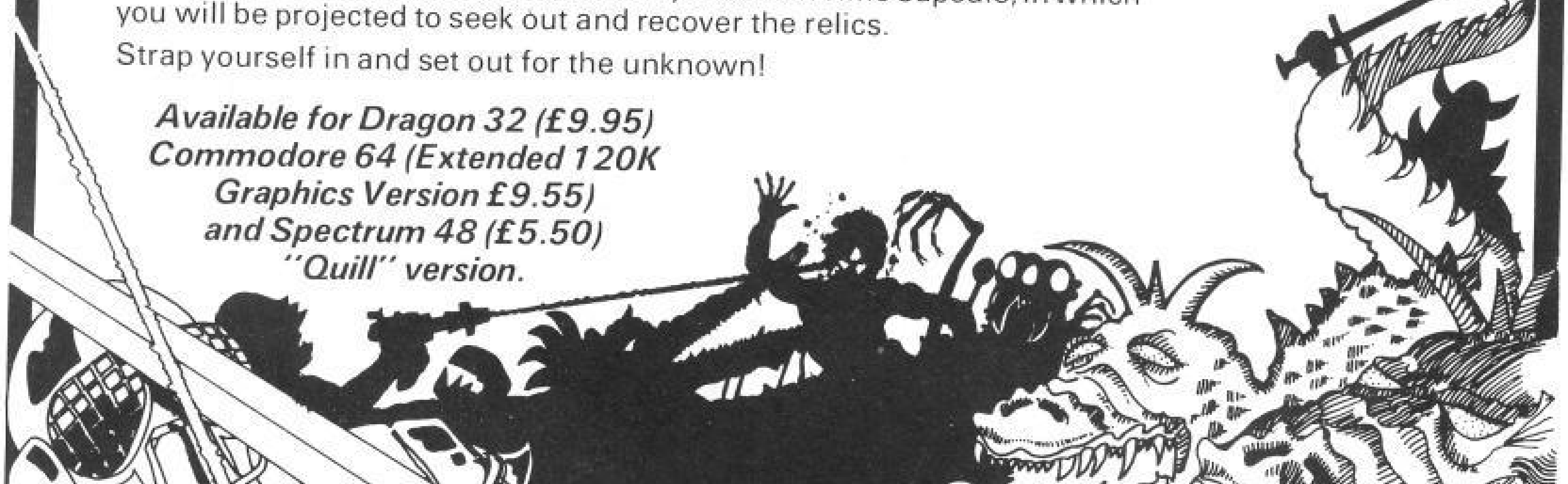
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20	(11)	HUNTER KILLER	Protek	★							£7.05
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12. ROBOT TANK (Activision)
13. DIG DUG (Atari)
14. PHOENIX (Atari)
15. PLAGUE ATTACK (Activision)
16. PITFALL (Activision)
17. CENTIPEDE (Atari)
18. KANGAROO (Atari)
19. MOUSETRAP (CBS/Coleco)
21. WIZARD OF WOR (CBS/Coleco)
21. FROGGER (Parker)
22. PAC MAN (Atari)
23. DONKEY KONG (CBS/Coleco)
24. MS PAC MAN (Atari)
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26. VANGUARD (Atari)
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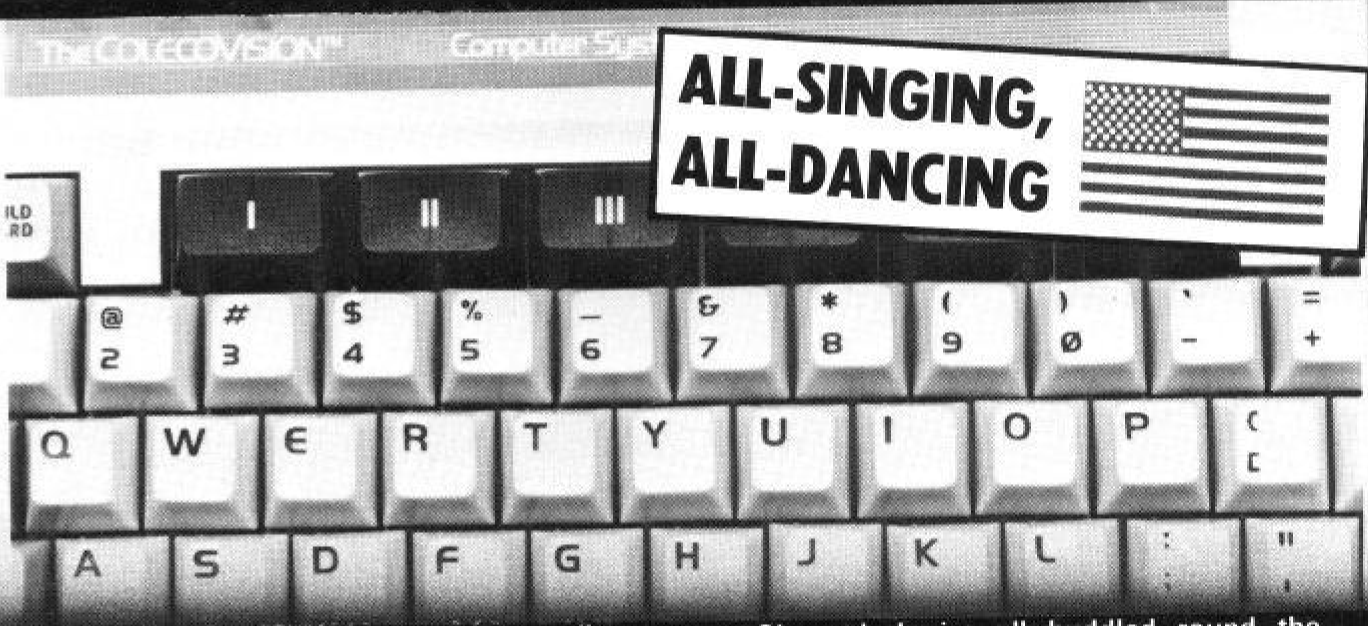
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THE CLA

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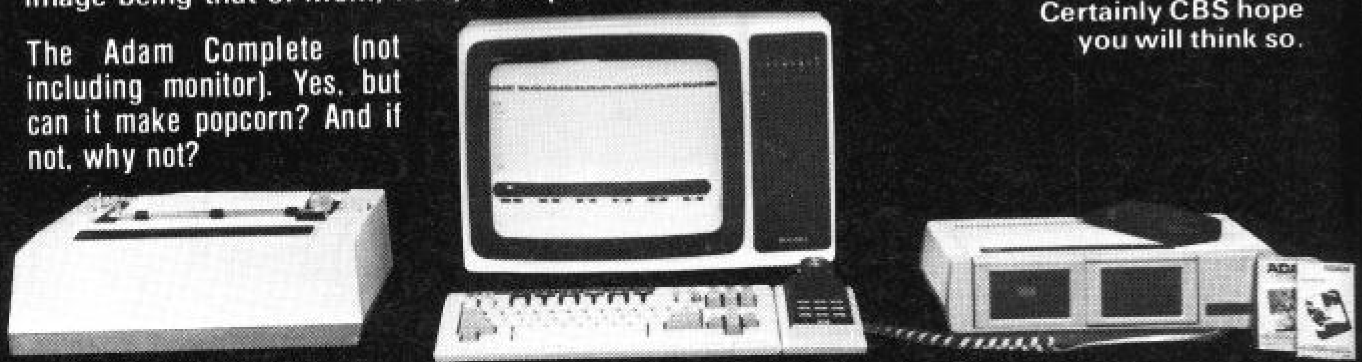
ALL-SINGING, ALL-DANCING

The **Coleco Adam** is the all-singing, all-dancing, all-in-one machine that came this Spring from the US company that brought you the world's most advanced videogame system. How good is it?

Actually, it seems as if it's technically very good indeed, as well as being excellent value for money (though on this, more below). 80K RAM is nothing to sniff at; you also get a daisywheel printer, built-in word processing, and of course instant access (provided you're willing to pay) to the outstanding library of ColecoVision ROM game cartridges. It looks pretty flash, too, with the detachable, sculptured keyboard, and the multi-K stringy-floppy data storage. All for around £600-£700? Seems too good to be true.

Then again, the actual price has crept up somewhat from last summer, when Coleco announced the Adam system. Secondly, it's not at all sure that their suss of the Brit Market will correspond with the admittedly potent US sale (the Adam is currently the best-selling mid-price system in the USA). Consider: in America the Adam is being sold as a 'family system' — the acceptable image being that of Mom, Paw, Gramps, Sis and Junior all huddled round the smooth-looking system, screaming with glee as each pixel flickers. Is that going to happen here? After all, the basic Coleco system is heavily games-based — and arcade games at that. Yet at the same time the Adam offers an efficient but patronising (and 40-col) word processor. What single person do you know who will want both the flashest/shallowest arcade games *and* a word processor? Come to think of it, what family (British) do you know who are still such novices to the market that they will opt simultaneously for what this country sees as two widely separate ends of the market at once?

Yes, it's an efficient system. But at £700-odd quid? For that you can get a QL *plus* a hi-res monitor; or an Elan *plus* a disc drive *plus* a hi-res monitor; or any other combination of the above. Yet it comes with all that CBS clout, undoubtedly will function without hangups, can be bought off the shelf (no mail-order queueing), and is an all-in-one package that you may well be able to persuade *les Parents* to stump up at least part of the cost for. Assuming you want a printer, it seems like a good buy. Certainly CBS hope you will think so.



The Adam Complete (not including monitor). Yes, but can it make popcorn? And if not, why not?

...SS OF 84

...dowhe Tube as usual and around the land the atmosphere ... salenen promoting their wares. It seems as if Brits and ... menf computer gamers. BIG K takes a look at the line-up

Reports: TONY TYLER, ANDY GREEN

SCROLL ON, IT'S A NEW ROM!

THE NEW 48K Oric ATMOS lives in a stylishly modern black and red plastic case of the same dimensions as the original Oric-1. In fact the two micros are almost exactly the same, bar a better keyboard and a new BASIC ROM on the Atmos. Most software that runs on the Oric-1 **will** run on the Atmos, although changes in way the Atmos reads tapes means that BASIC programs sometimes won't auto-run upon loading — bad news for programs that use Auto running as copy protection ...

Apart from the full travel QWERTY keyboard and the new colours the Atmos appears identical to the Oric-1 from the outside. The same interfaces come out the back: TV socket, RGB monitor, cassette port, printer port, expansion port and power socket, and there is still the famous built-in loudspeaker, albeit a little quieter than the explosive Oric-1 sound system. This also cures an important 'bug' on the early Oric-1 ... when the speaker tried to draw too much current on loud noises the screen 'shuddered' badly, rendering it unreadable.

The new BASIC ROM that Oric have developed — V1.1 instead of the V1.0 used in the Oric-1 — succeeds in squashing many bugs and has several new commands, including a VERIFY extension to the CLOAD command which checks that what you've just saved matches what's currently in memory; STORE and RECALL which let you save and read variables and strings to tape; and the Boolean algebra commands AND OR and NOT.

Speed-up

The new cassette handling routine now prints up the filename currently loading together with the letter B or C (for Basic or machine Code). This together with the ability to save individual variables to tape is a vast improvement.

The best thing about the new Basic is the sped-up scrolling. On the Oric-1, scrolling was tortuously slow, giving the whole computer a very unprofessional appearance. The new scrolling routine is very slick.

The original Oric-1 manual has been variously described by Oric personnel as 'A joke', (Groaning sound) and 'Yes, I'm sorry about that'. I am pleased to report that the new Atmos manual has improved dramatically — in facto, it's one of the best I've seen for a long time.

Things missing that could-/should have been included are a built-in assembler *à la* BBC, a joystick port and a 'reset' switch accessible without turning the machine over!

The Oric-1 graphics were slagged off when it first came out ... and, sad to say, the Atmos is little better. Although as the Atmos Demo Tape shows, two-colour graphics are easy to implement and give a resolution of 240 by 200, eight colour displays are a real hassle and in some cases nigh on impossible to implement. That said, clever programming can still give some very good graphics.

Add-ons to be expected shortly include an Atmos disc drive (which we've seen, and it is very, very nice) using 3 inch microdiscs, and the long awaited Modem — although don't expect that too soon.



THE CLASS OF 84

DETACHABLE THIS, INFRA-RED THAT

The **IBM PC Junior** — unofficially known hitherto as the Peanut — represents Big Blue's much-heralded shot at the "lower" (i.e. games freaks') end of the market. IBM, since their entry into the pc market with the now-definitive (and pricey) PC (senior), have come to dominate the £2,000-plus end of the market; you can scarcely get a personal computer off the ground in the USA these days without advertising it as 'IBM-compatible'. What does this mean for the PC Junior?

Again, like the Coleco Adam, here we have a shot at the punter who is thought to have more than £500 to spend — and is willing to spend it. This seems to be a phenomenon of the US market — the idea that the Com 64/Atari price bracket is now such small beer that the next generation of customers will willingly splash out another monkey or two on a machine that really adds nothing to what you can already buy except an infra-red keyboard and of course the deservedly fabled IBM after-sales service.

Infra-red? This means you can sit twenty feet away from your TV and still tap away. But at the twenty feet can you **see** your TV screen? Much sarcasm has already been expended on this apparent blunder. Another hangup is the unlabelled keyboard (the idea being that you buy overlays with various bits of software). Will us perennially broke Brits be prepared to lash out £300 over the odds for the luxury of a useless feature (the detachable keyboard) plus the IBM name? Your guess is as good as ours.

As for games, Imagic (the US ROM specialists) have signed a megadeal to produce stuff for the Junior, with the first carts being premiered at the recent Las Vegas CES show. Admittedly they're good carts — but is this what we really need at this stage of the game?



PRICES:

More than £500

Coleco Adam (USA)

IBM PC Junior (USA)

£300-500

Sinclair QL (GBR)

Under £300

Atari 800XL (USA)
Elan (GBR)
Atmos (GBR)



FIRST IN — LAST OUT?

They've been written off more times than Freddie Laker, but can sti weigh in with a sharp product at an affordable price. Besides, ***Atari*** *a name of magic.*

What's new from the people who brought you the world's first (an still best-selling — just) videogame system? Why the ***XL*** *range, o course; successors to the 400/800 range. All the way from th bottom-end, 16K (but expandable to 64) 600XL, through the 800X (64K built-in), to the top-end 1450 XLD, with two built-in disc drives Currently on sale: the* ***Atari 800XL.***

Essentially, it's an 800 souped-up with a new, streamlined casin and considerably more ROM. And what's wrong with that? Especiall when you consider that (unlike the ill-fated and never launche 1200), this means that the world's most extensive and flash shoo 'em up library is yours for the asking (and, let it be said, th paying-out).

BEWARE OF THE BLACK REVOLUTIONARY

It's a fairly safe bet that once all the shouting has died away, the savants will remain of the opinion that the **Sinclair QL** is an exciting and revolutionary machine.

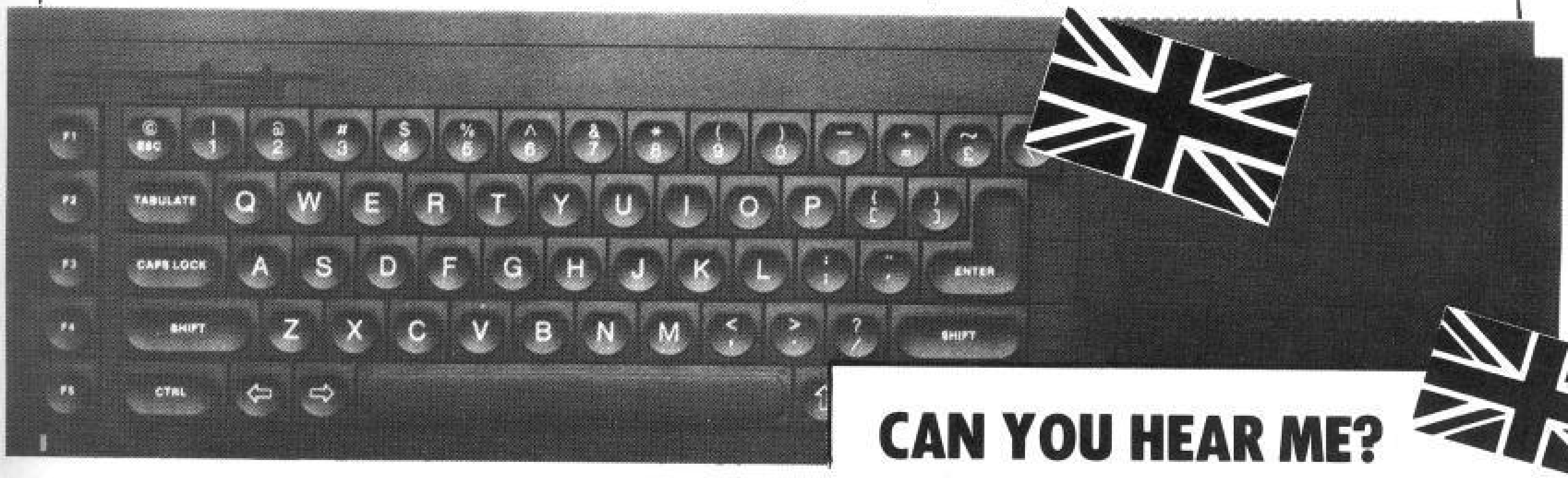
Consider the statistics: 128K RAM. The 68008 32-bit (nearly) processor. Sleek black looks. Microdrives as standard. And the price — which, at £399, is obviously pitched against the Acorn BBC machine. (This, despite its excellence and apparently unlimited expandability, is going to have to work a whole lot harder from now on.)

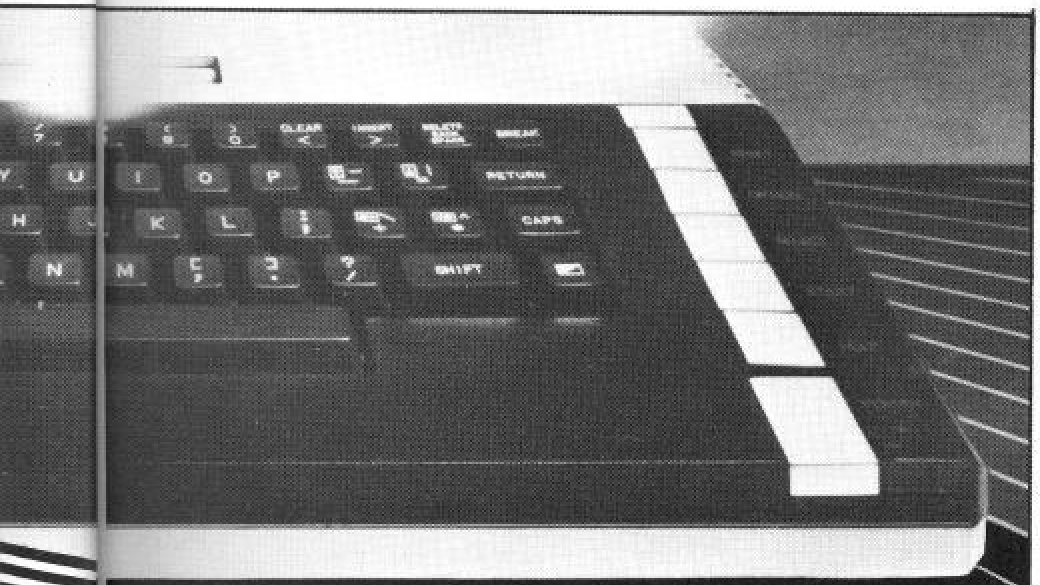
The QL is still — at time of writing — so new that it's not easy to predict exactly who will do what with it. 128K seems to argue a facility for giant adventure games — and with adventures now coming into their own as they are, so much would seem to be an ace bet.

Its graphics abilities would also seem on paper to be superb, though again we have to say we haven't seen them. In this connection, at least one major British software company we know has sent all its employed programmers on a 68000 Assembler course. This processor certainly seems to be the state of the art, and *the* chip to get involved with over the next two years (goodbye Z80? Arrivederci 6502?). Yet Uncle Clive has hedged some of his bets. The looks of the QL appear to indicate a long pent-up lust on Clive's part to get in amongst all that small-business-user money. Whereas the extraordinary price makes the machine within the reach — just — of games players. It's probably safe to say that Sinclair have thrown a unique machine at the market and are waiting to see which way it will land.

Against it: slowish microdrive technology, the sluggardly Sinclair mail-order system and the fact that Motorola are currently rejecting 98% of all 68008 chips coming off-a-da assembly lines, making the second-mentioned even more of a problem.

For it: outstanding value; unlimited possibilities in practically every sphere.





The 800XL's virtues are the virtues of its predecessor: a 6502 processor, ANTIC and GTIA chips giving you unparalleled graphics abilities and up to 256 — count 'em — colours. Its failings are the failings of its software (to date): i.e., shallow plotlines, too much bang-bang. And if Atari were keeping up their old-style Americano-ism, that might be enough to make you come over alltionalist. But they aren't. They've recently cleaned up their act to a great extent, and have launched AtariSoft to cater for the wealth of software writing talent presently to be found in the ol' UK. Good for them — alone among the US giants.

And if the guts of the new machine are very similar to the guts of the old 800 . . . what's wrong with that? That computer was way ahead of its time when launched, and is still second to none in its price bracket.

Our feeling is that, despite the apparent attractions of the Adam, and the Big Namesville of the IBM PC Junior, it'll still be the Atari 800XL which will keep the Stars and Stripes flying in most British homes when all the shouting is over and all the salesmen have been fired.

They were the first in — they may just be the last out.

CAN YOU HEAR ME?

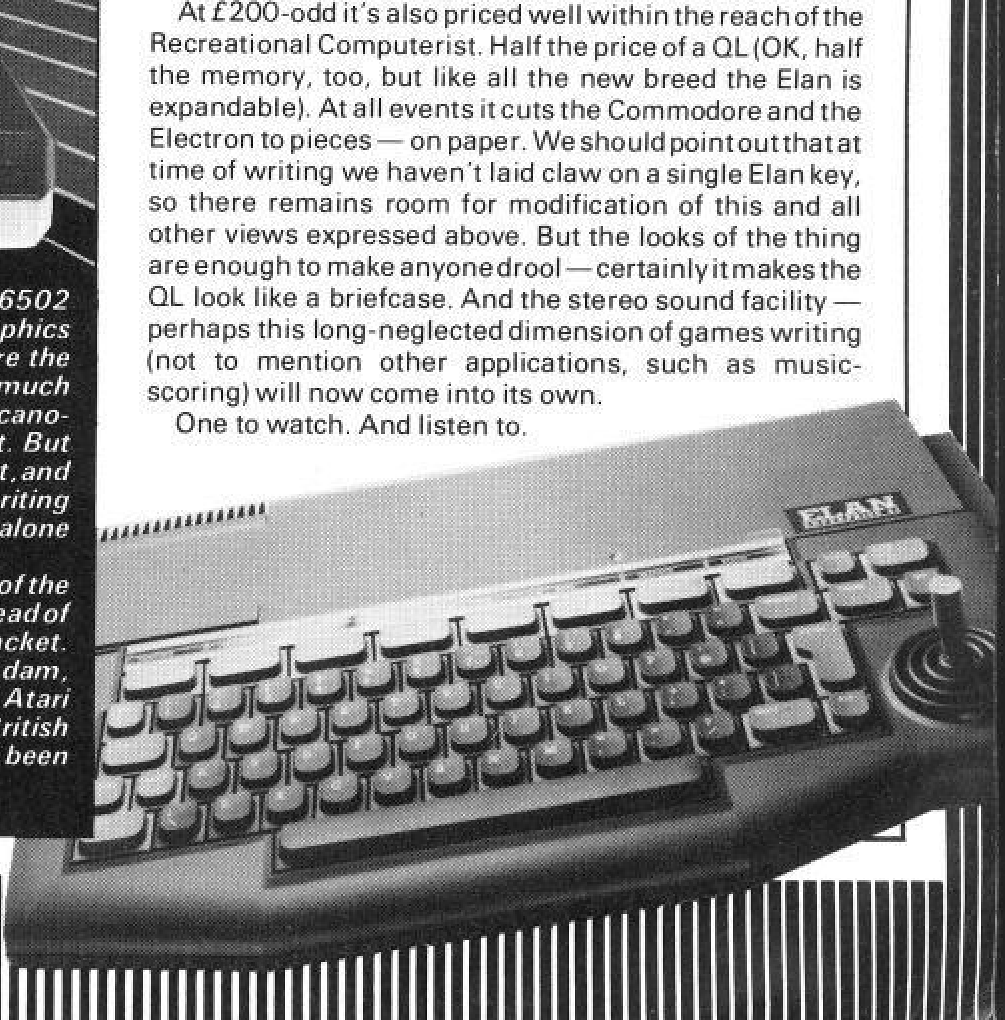
Without a doubt the most excitingly styled machine to come on the market to date is the all-British **Elan.**

Style, you say, is OK — what else can it do?

How about 64K standard memory (actually 52K usable RAM — beat that, Commodore). How about stereo sound? (Beat that everybody). Sound being perhaps the most neglected of all computer facilities to date, it's safe to say that by providing stereo, Elan have taken the games possibilities up more than a notch. Another factor: the built-in joystick (a facility shared by Spectravideo), which does away with Peripheralitis in no uncertain terms.

At £200-odd it's also priced well within the reach of the Recreational Computerist. Half the price of a QL (OK, half the memory, too, but like all the new breed the Elan is expandable). At all events it cuts the Commodore and the Electron to pieces — on paper. We should point out that at time of writing we haven't laid claw on a single Elan key, so there remains room for modification of this and all other views expressed above. But the looks of the thing are enough to make anyone drool — certainly it makes the QL look like a briefcase. And the stereo sound facility — perhaps this long-neglected dimension of games writing (not to mention other applications, such as music-scoring) will now come into its own.

One to watch. And listen to.



WIN AN ATARI 800XL PLUS DISC DRIVE!



FREE TO ENTER

RULES

There is no entry fee but each attempt must be made on a proper entry coupon cut from BIG K, and must bear the entrant's own name and address.

All accepted entries will be examined, and the first prize will be awarded to the entrants who, in the opinion of the judges, has shown the greatest skill and judgement in selecting the most apt or accurate answers for the ten questions. Remaining prizes will be awarded for the ten next best attempts, an no entrant may win more than one prize. All prizes must be accepted as offered — there can be no alternative awards, cash or otherwise.

In the event of a tie for any prize(s), those tying will take part in a postal eliminating contest to determine such winner(s) or winning order.

Entries arriving after the closing date will not be considered, and no responsibility can be accepted for entries lost or delayed in the post or elsewhere. Any entries received incompleted, illegible, mutilated or altered or not complying exactly with the instructions and rules will be disqualified.

The competition is open to all readers in Great Britain, Northern Ireland, Eire, the Channel Islands and Isle of Man other than employees (and their families) of IPC Magazines Ltd., Atari proper title and the printers of BIG K.

Decisions of the judges, and of the Editor in all other matters affecting the competition, will be final. No correspondence will be entered into. Entry implies acceptance of the rules as final and legally binding.

Winners will be notifed, and the result will be published in a later issue of BIG K.

The 800XL is the latest in the superb line of Atari computers to be released in the UK. It boasts an incredible 64K RAM, smooth good looks, a HELP key — and it gives you access to the largest games library in existence. Fifteen graphics modes allow you to address a palette of 256 colours at one time — no other computer offers you such a facility.

The 1050 Atari Disc Drive is the perfect complement to the 800XL. With low, streamlined looks, near-silent operation and dual-density capability, it offers the most advanced performance available.

To win an 800XL plus 1050 Disc Drive, just complete the questionaire below to the best of your knowledge (and ability).

Runners-up will receive prizes of AtariSoft games — which run on most popular micros.

HOW TO ENTER

Below are ten far-from-difficult questions about computers with each are given three possible answers; simply decide which of these most aptly or accurately answers that question — A, B or C.

Write the key letters of your chosen answers — in ink — in the spaces on your entry coupon, each under its question number. For example, if you consider "an acronym of ATtractive American Retail Investment" is the most suitable answer for question No. 1, put B in the first space, and so on for all ten.

Complete the coupon with your own full name and address, and post in a sealed envelope to: **BIG K/ATARI COMPETITION, 55 EWER STREET, LONDON, SE99 6YP, to arrive not later than Thursday, 31st May, 1984.**

IMPORTANT

Before sealing, copy out — on the outside back of the envelope — the key letters of your ten answers in exactly the same order as they appear on your completed coupon. YOUR ENTRY MAY NOT BE CONSIDERED IF THIS IS NOT DONE. Do not enclose any correspondence or matter other than the coupon

ENTRY COUPON

BIG K/ATARI COMPETITION

1	2	3	4	5	6	7	8	9	10

In entering this competition, I agree to abide by the rules and to accept the published result as final and legally binding.

NAME ....

ADDRESS ....

....

....

Age if under 18 years ....

THESE ARE THE QUESTIONS...

(1) The word *Atari* is...
(a) the Japanese equivalent for Checkmate in the game Go
(b) an acronym of ATtractive American Retail Investment
(c) a term for falling off a surfboard

(2) Pressing the 'Help' Key on an Atari XL computer will get...
(a) the fire brigade!
(b) a list of the operating system commands
(c) whatever the HELP key is programmed to produce

(3) ATARI was founded by...
(a) Caspar Weinberger
(b) Nolan Bushnell
(c) Steven Jobs

(4) ATARI is a wholly-owned subsidiary of...
(a) Warner Communications
(b) Paramount Pictures
(c) The *Wall Street Journal*

(5) Silicon Valley is in...
(a) Southern California
(b) Arizona
(c) Northern California

(6) Disc Drives are better than cassette due to...
(a) faster loading time
(b) greater reliability
(c) random access

(7) BASIC is favoured for most home micros because...
(a) it is already widely understood
(b) it is easy to learn
(c) it is under constant development

(8) Good games design depends on...
(a) multi-colour screen mixes
(b) high resolution graphics
(c) imagination

(9) Which of the following did NOT start life as an arcade game...
(a) Pac-Man
(b) Star Raiders
(c) Defender

(10) How many different colours can an ATARI home computer display on screen...
(a) 256
(b) 128
(c) 16


1984
QUICKSILVA
...THE YEAR OF THE GAME LORDS.
NEW RELEASES!
COMMODORE 64
STING 64 £7.95
Author: Anton Hinxman
Hive-cave action!
Bertie Bee needs help defending the hive. Fight off the invading swarms, battle the bees and defend your Queen!
COMMODORE 64
BUGABOO (THE FLEA) £7.95
Author: Indescomp
Itchy action!
Jump your way out of the caves with Bugaboo the flea but beware of the fearsome Dragon as you jump around the exotic vegetation.
48K SPECTRUM
RAYMOND BRIGGS' THE SNOWMAN £6.95
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An enchanting game based around episodes of Raymond Briggs' amazingly successful book.
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Battle the Ants in the soft solid 3D city of Antescher.
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DRAGONS BANE £6.95
Authors: M. Preston, P. Hunt, R. Rose, D. Moore.
A mythical graphic adventure in the dark and deadly halls of Earthstone Castle. Battle Dragons, Vampires, Sphinx, Zombies, Skeletons, Gryphons and other legendary beasts to rescue the beautiful Princess Paula.
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Author; Indescomp
Action beneath the Pyramids!
Fearless Fred the Intrepid Archaeologist searches the creepy catacombs below the torrid tomb of 'Tootiecarmoon' for the terrible treasures amidst monstrous mummies, ghastly ghosts, bats and rats!
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COMMODORE 64 • PURPLE TURTLES Authors: Mark & Richard Moore £7.95
VIC 20 + 3K or 8K RAM • SKYHAWK Authors: Steve Lee/Chartec £7.95
DRAGON • MINED OUT Authors: I & C Andrew/Incentive £5.95
BBC MODEL • THE GENERATORS Author: Dave Mendes £5.95
All titles available from Quicksilva Mail Order
P.O. Box 6, Wimborne Dorset BA21 7PY.
Quicksilva programs are available from: Boots, W.H. Smiths, J. Menzies, Microdealer, HMV, Hamleys, John Lewis, Computers for All and all reputable specialist computer stockists.
SEND S.A.E. FOR FULL COLOUR CATALOGUE

On the trail of the Hobbit Habit...

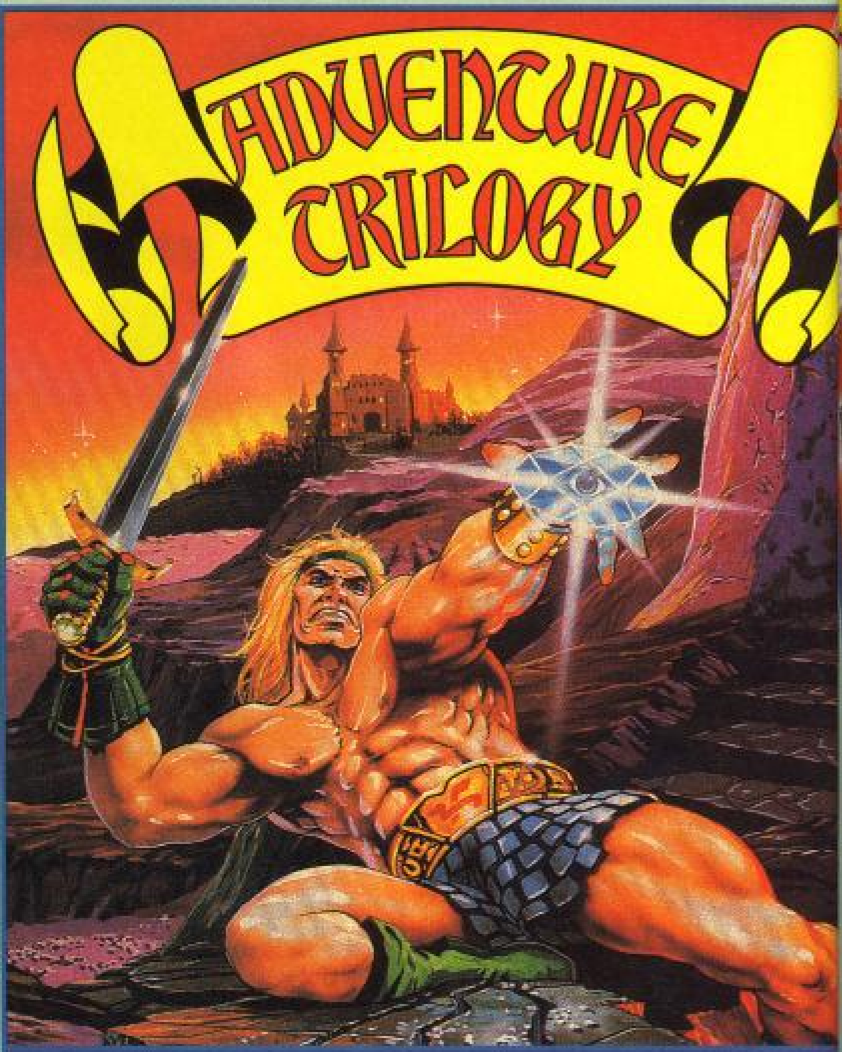
The Hobbit comes in the usual Melbourne House cardboard package together with a paperback copy of the book by J.R.R. Tolkien. Like the original Spectrm version the Oric program boasts high resolution pictures that are 'painted' when you visit certain locations in the adventure. Over the past few months several 'Hobbits' have been released by Melbourne House for various computers. However, due to lack of memory space the BBC version doesn't contain any graphics.

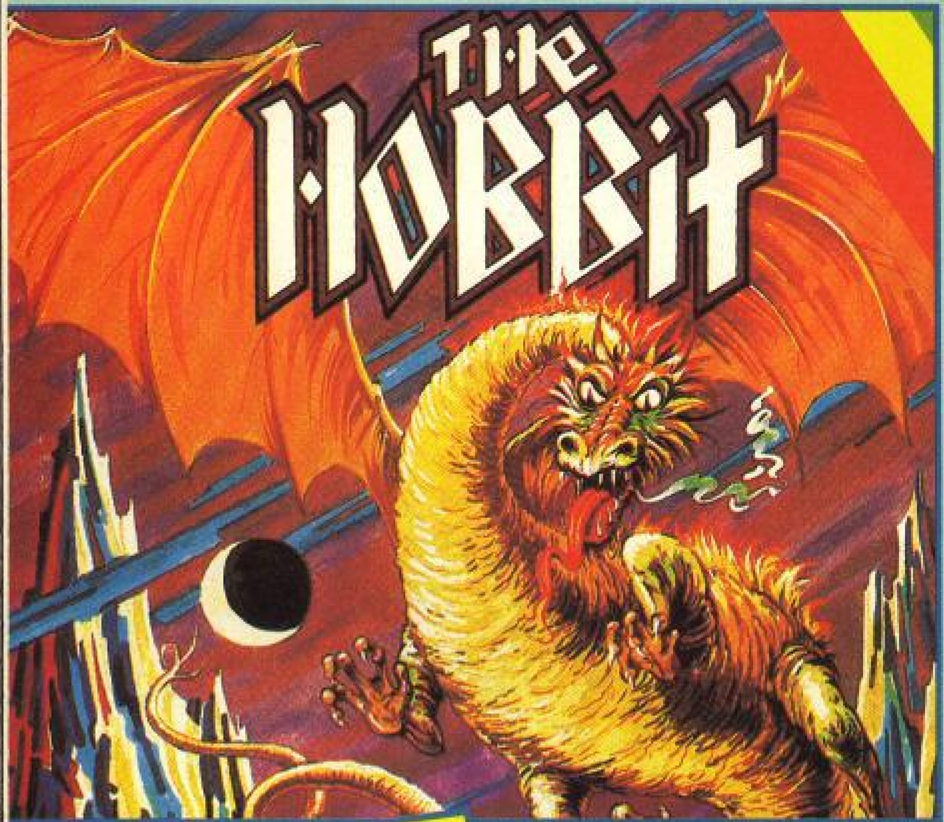
Graphics are only two-colour on Oric, unlike the 8-colour pictures on the Spectrum. This doesn't detract from the art much, and the graphics are very nice to look at. I won't spoil the fun by describing the game plan, but suffice to say locations and people from the book make an appearance.

Talking of the people, the much vaunted Animaction algorithm — which supposedly lets animals and people interact with you 'physically' and verbally — turns out to be a disappointment. Thorin's vocabulary, for example, consists of telling you to hurry up, or sitting down while you're being eaten by a troll and singing of gold.

The HOBBIT — on any micro — is a significant advance over simpler adventures written in BASIC, but it doesn't, in my opinion, come near any of the INFOCOM series. For Oric, the graphics are very good, and I guess even at £14.95 the program is worth checking out. — A.G.

Game: THE HOBBIT
Maker: MELBOURNE HOUSE
Machine: ORIC-1
Format: cassette
Price: £14.95
Rating: KK



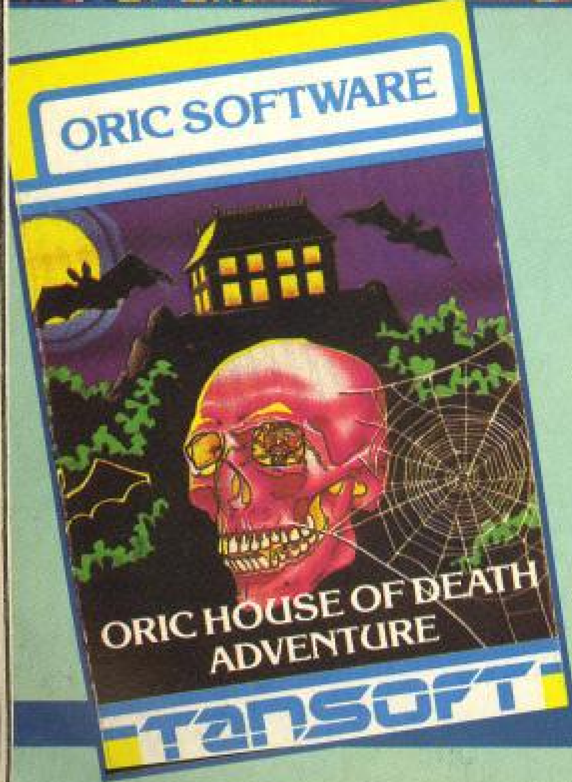


THREE TIMES A LOSER

Incomprehensible graphic 'adventure' from the same team that brought you *Beyond the Cimeeon Moon*, a tarted down maze game. Like *Moon* this is exceptionally unfriendly. A shame really as the scenario seems almost interesting. You play a warrior in the realm of Mandoor. With your firespouting war sword you must vanquish the dreaded denizens of the combat arena before embarking on a bold quest for the Eye of Dazmor. All well and good you might think. Unfortunately the game is almost inaccessible. You're only granted a vocabulary of sixteen words to play with and the graphics themselves are baffling. I couldn't make out what was meant to be happening most of the time. I mean, what would you make of a screen that depicted only a small red globe? It looked like a disembodied zit to me. Serious adventures are advised to steer well clear of this supposed trilogy. I've had more interesting adventures shopping in Neasden. — **S.K.**

Game: ADVENTURE TRILOGY
Maker: DRAGON DATA LTD
Machine: DRAGON 32
Format: cassette
Price: £7.95
Rating: none

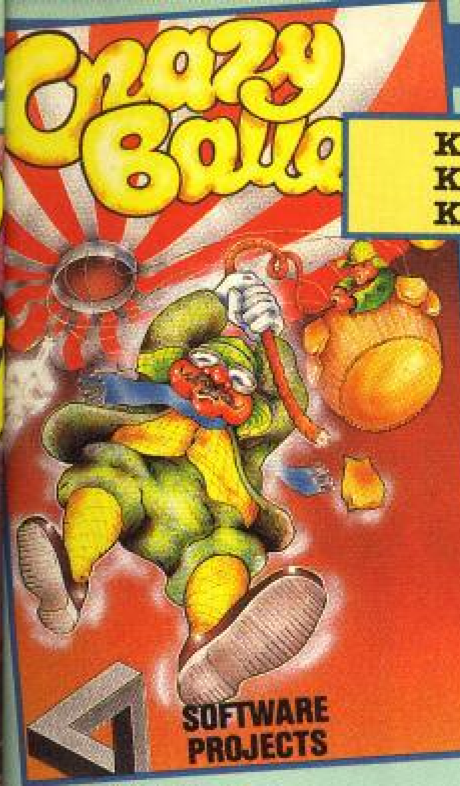
Reviewers
Richard Burto
Paul Rambali
Tony Tyler
Steve Keaton
Andy Green
David Crosswel



LAUGH? I Nearly Died.

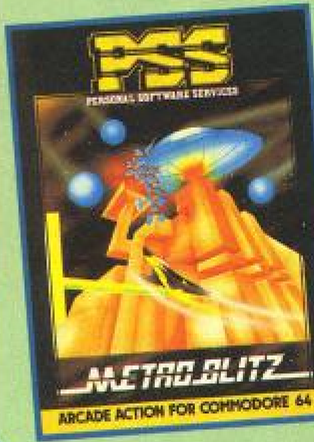
House of Death *is a non-graphic adventure game set in an abandoned horror movie studio, a location brimming with possibilities. Naturally, it's a test of nerve as well as logic. Halfway up the stairs, you are told that they are particularly rickety at this point. GO UP and you go up — but try coming down again with any treasures from the second floor . . . The treasures themselves are out of the ordinary. As you find yourself wandering about wearing a scuba outfit and a werewolf mask, clutching a tadpole and a cake marked "Eat Me", you feel the author's sense of humour could have been well used on* Game For A Laugh. *But there is a method in this madness (though I have yet to find a use for the tadpole) and the zanier aspects of the adventure make it all the more distracting. While the dialogue can be somewhat limited, for a 48K game* House of Death *offers the maximum entertainment. My only gripe, as a fan of horror movies, is that some of the details are drawn from the general store of adventure archetypes, and there still remains a great horror game to be written.* — **P.R.**

Game: HOUSE OF DEATH
Maker: TANSOFT
Machine: ORIC-1
Format: cassette
Price: £9.99
Rating: KK



K = Could Be Better
KK = Could Be Worse
KKK = Unsurpassable

DONNER UND METRO



*LET'S FACE it, any aliens daring to invade Earth these days are in b-i-i-i-g trouble! Fast, space-zapper games like **Metro Blitz** here are spawning a whole new race of hyper-reflexed beings with brilliant hand-eye co-ordination. Put them in charge of the laser batteries and we'll have no problems!*

*While we wait **Metro Blitz** is good practice at tackling overwhelming odds. Alien craft are descending on the city in suicide raids that destroy parts of the city each time one lands. You have command of a small, nimble fighter with one mission only . . . blast anything that moves.*

At first glance the game looks limited with all the action taking place on one screen and with no scrolling. However, with 24 attack waves and six different types of aliens there's plenty to keep you busy. Some aliens exhibit deviousness by scrolling in from the side at high and low levels or releasing hunter drones to follow your every move.

A generous 10 ships to start with means that you can survive for quite a while before succumbing to the inevitable 'no win' conclusion. Bonus points and an extra ship are awarded for surviving each wave.

***Metro Blitz** looks and sounds good but, ultimately, ranks with all the other space shoot-em-ups as fun until easily tired of. On the other hand, if playing it can one day save the world, well . . . —* **R.B.**

Game: METRO BLITZ
Maker: PSS
Machine: COMMODORE 64
Format: cassette
Price: £7.95
Rating: K

THIS BLIMP IS A WIMP

The inlay card speaks of Crazy Nathan Wigglesworth, Flyer Supreme, and his trusty pal T.C. Barton undertaking ". . . the balloon trip of a lifetime". Of these two gentlemen I could find no sign, not of the 'churches and skyscrapers" they were supposed to fly over (though they might appear in the higher levels of the game). All I could find was a lazily swinging green balloon in a spiky labyrinth. Hardly the trip of this or any other lifetime.

Your task — should you decide to accept it — is to guide the balloon (one of six) safely through the maze avoiding contact with any of the surfaces. The slightest touch — even by the basket — causes the balloon spectacularly to deflate and plunge to the ground.

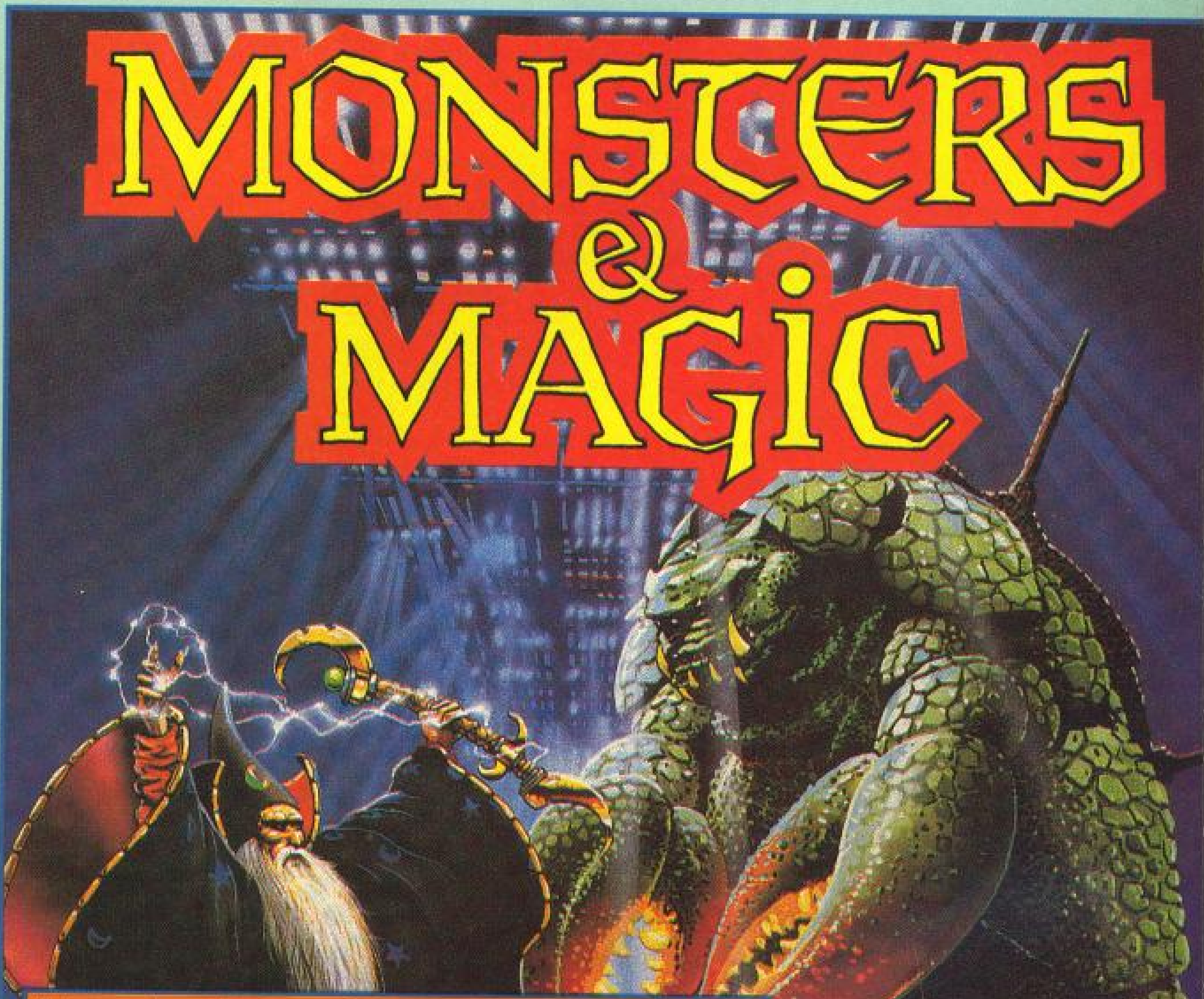
This task is made more hazardous by the ballon's swinging, making it a larger target, and various mobile sharp things which inhabit each of the 26 levels. There are even magnets to pull the ballon off course and targets to aim for which can net you extra points.

Crazy Balloon does little to earn its name. The colours are pretty, the sound is minimal and the game play rarely climbs above mildly frustrating.

As for Crazy Nathan and his pal — they probably opted for the latest in flight simulation programs. — **R.B.**

Game: CRAZY BALLOON
Maker: SOFTWARE PROJECTS
Machine: COMMODORE 64
Format: cassette
Price: £7.95
Rating: K

MONSTERS & MAGIC



Not so much an adventure as Dungeons and Dragons with chips. Those familiar with the boxed version will recognise the format. Before you can set off and vanquish the Demon Lord your character must be created. Various values are assigned to strength, constitution and the like, and then hit points and gold pieces allocated. Hit points represent the amount of damage your character can withstand. Encounter a fiend and you'll have to select a weapon from your supplies and hope the computer dice rolls in your favour. Survival being down to the number of hit points prevalent and the amount of damage rolled by the dice. Obviously the higher your points the more encounters you're likely to survive. It's a tried and tested formula.

Having entered the dungeons you'll be given a menu of possible options: Fight, go on, run, search or purchase supplies. The screen then details the consequence of your actions. Action freaks will delight in the knowledge that there are fifty-two species of nasty to conquer and there's a thoughtful provision for both short and protracted expeditions. Some might prefer this role-playing exercise to the more traditional adventure. For me it had only limited appeal. I prefer brainteasers alongside the bloodletting. — **S.K.**

Game: MONSTERS AND MAGIC
Maker: DRAGON DATA LTD
Machine: DRAGON 32
Format: cassette
Price: £7.95
Rating: KK

ORICULA

The scenario is this: armed with only a pistol firing silver bullets and the ability to open windows, the good friar has been charged with sanctifying Dracula's numerous castles. I suppose everyone is by now used to finding these fanciful descriptions reduced to caricature graphics and stock game formats. *Dracula's Revenge* is a Snakes & Ladders type maze game, the best of which is *Elevator* in the arcades. It's simple, but it's fast and the basic elements are cleverly plotted. While the characters — ghosts, werewolves, the vampire and the friar — are typically crude, the changing light outside the castle adds a splash of colour. Letting in the daylight (by touching the ends of a corridor) will slay the vampire, twilight will despatch ghosts, but once evening falls there's no alternative but to dodge until dawn comes. *Dracula's Revenge* lacks a two-player function, but the action is remarkably smooth and instantly addictive. Side by side with similar cartridge games, such as Coleco's *Space Panic*, you wouldn't know the difference. — **P.R.**

Game: DRACULA'S REVENGE
Maker: SOFTEK
Machine: ORIC-1
Format: cassette
Price: £6.95
Rating: KK

HOLE IN 10

Ahh. The rush of bracing fresh air into the lungs, the crunch of emerald turf beneath your feet, the solid weight of a number nine iron in your palm. There's nothing like it . . . here. The graphics appear to have been etched with a trowel and any similarities between it and the real thing are obviously coincidental. In fact it rather reminds me of an old Atari VCS cart. You have to guide your little golfer, who looks as if he's had one over the eight, around a nine hole course. Just line the tip of his club against the ball and then hit your fire button. The longer you hold the button down the greater the force of the put. Thrilling indeed. Unlike Pool this is one game which doesn't convert well to the small screen and only the most enthusiastic of golfers here will find anything of interest here. The animation is hesitant and sound sparse. Personally I'd like to bury the thing in the nearest bunker and forget about it. — **S.K.**

Game: TEE OFF
Maker: DRAGON DATA
Machine: DRAGON 32
Format: cassette
Price: £7.95
Rating: none

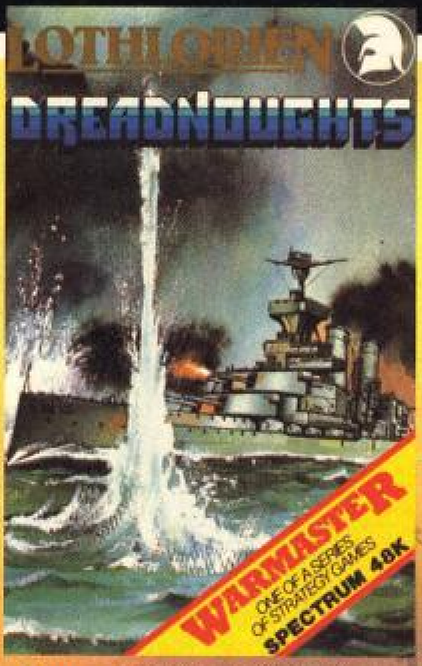
LOAD! LOAD! LOAD!

FUNNY HOW life imitates Art. Just as the US Navy put the giant World War II battlewagon **New Jersey** back in commission and sent it to lurk menacingly off the coast of Lebanon, several software companies obviously decided that there's mileage in resuscitating this obsolescent — but fascinating — form of naval warfare, where gun-armed ironclads seek each other out on the high seas and, having found each other, do their best to blow their opponents out of the water.

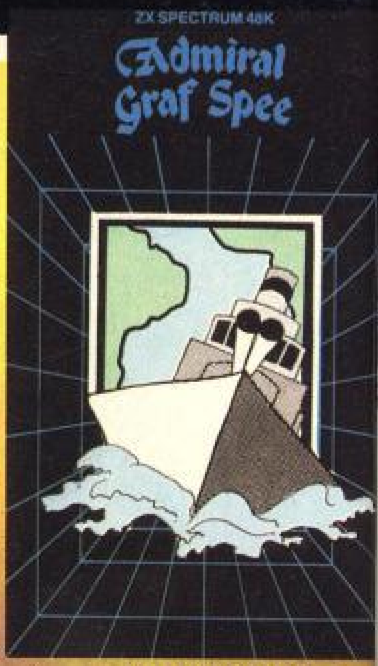
Both MC Lothlorien (**Dreadnoughts**) and new Rye-based company Temptation (**Admiral Graf Spee**) have elected to simulate actual eras of battleship warfare. The first goes for that most fascinating of epochs, the 1914-18 war, when mighty fleets hunted each other over the wintry North Sea. Temptation's offering reproduces the last cruise of the pocket battleship **Graf Spee**. Both have 'search' modes, with **Dreadnoughts** allocating you a pre-set plotline and **Graf Spee** allowing you to hunt the oceans rather like the Thorn-EMI game **Submarine Commander**. Of the two, the Lothlorien search mode is the more realistic, since it exactly reproduces the confusion and poor visibility for which that era of naval warfare was noted. However, **Dreadnoughts** is fairly dull to look at consisting essentially of menus and — I have to say it — spreadsheets, whereby you alter individual vessels' speed and heading.

Dreadnoughts eventually gives you a 'look-down' (Zeppelin?) view, whereas the Temps opt for a bridge view. Combat sequences therefore are tokenised on **Dreadnoughts** and — because of the BASIC programming — tacky and wooden on **Graf Spee**. The best thing about either game is the capability of **Dreadnoughts** to allow two players to alternate on the same consule, so that what each player sees (the other guy politely staring at the wall meantime) is exactly what the admiral would see.

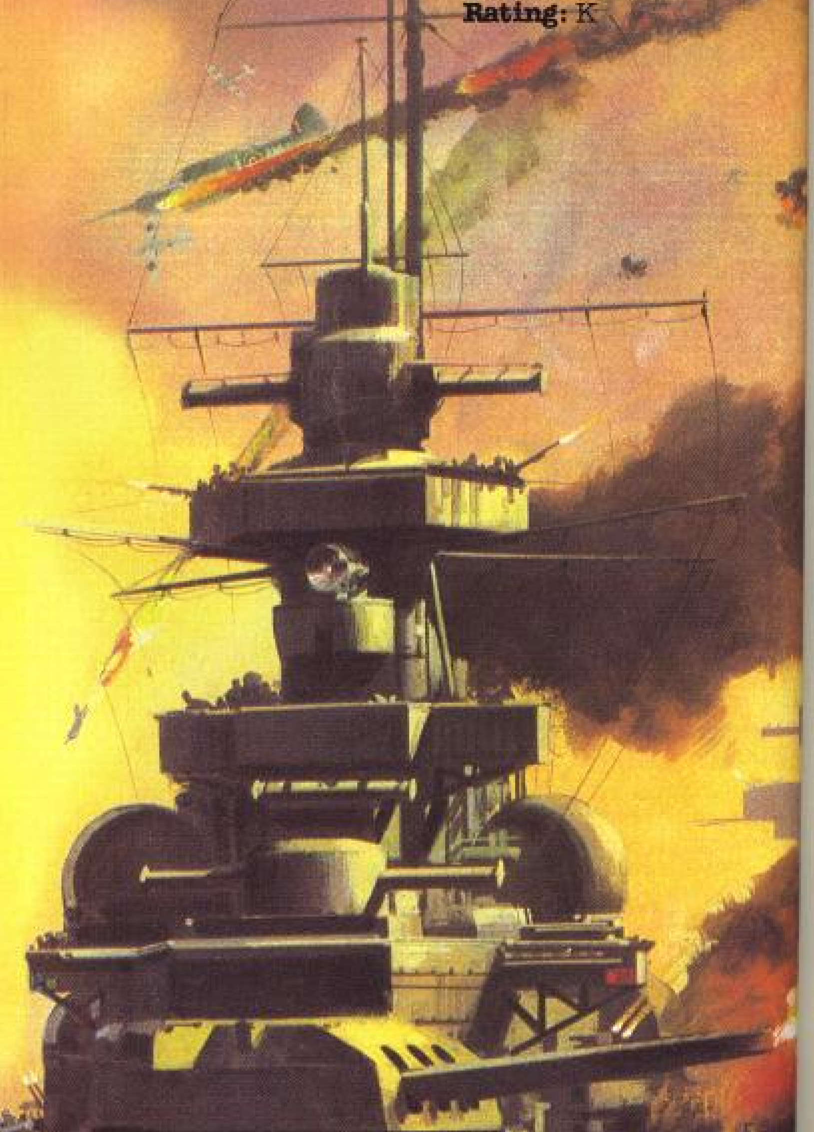
Of the two, **Dreadnoughts** is the more authentic overall and more visually boring; while **Graf Spee** is precisely the other way around. Neither address the contemporary problem of rangefinding in any way. Overall, I feel the ultimate naval wargame has yet to come. — **T.T.**



Game: DREADNOUGHTS
Maker: MC LOTHLORIEN
Machine: SPECTRUM 48K
Format: cassette
Price: £5.95
Rating: KK



Game: ADMIRAL GRAF SPEE
Maker: TEMPTATION SOFTWARE
Machine: SPECTRUM 48K
Format: cassette
Price: £5.95
Rating: K



K = Could Be Better
KK = Could Be Worse
KKK = Unsurpassable



Tired of flying your dinky little Sinclair/Psion Flight Simulation program? Ready for something with a bit more muscle? How about an F15 Eagle USAF air-superiority jet fighter? Yours for less than eight quid with this program, guv. No questions asked.

Fighter Pilot is nothing short of state-of-the-art stuff for the Spectrum. A really impressive instrument panel is displayed along the lower portion of the screen with a full 3D-effect cockpit view taking up the rest of the display. Runways and enemy aircraft are rendered in excellent hi-res graphics.

The instrument panel itself is masterpiece of graphics with scrolling and rolling displays, showing up those cop-out all-digital read outs of some other simulations. It really conveys the 'feel' of being at the controls of a real aircraft.

So what can it do? Pretty much everything short of severely damaging any property or life. There are options for take-offs and landings (blind and with cross-winds if you like), flight (with or without turbulence), combat practice and actual air-to-air combat. It's even fully aerobatic — looping the loop is great fun!

Instruments include artificial horizon, flight computer, radar, compass, ILS, thrust indicator and ammo count. Everything needed to track down the enemy and give him a severe thrashing.

In fact there are so many features included in the program that they cover two full information sheets and make fascinating reading.

In reality **Fighter Pilot** can't be regarded as 'just another computer game', it is a total experience. It has been devised by experts in the field of flight simulators aided by guys who fly planes like the F15 for a living.

The program runs in 100% machine code and is compatible with all the major joysticks. At the moment it's in a class of its own... and I reckon it'll take some beating. — R.B.

Game: FIGHTER PILOT
Maker: DIGITAL INTEGRATION
Machine: 48K SPECTRUM
Format: cassette
Price: £7.95
Rating: KKK

HO HUM

Bland climbing game that suffers from gutless presentation and lack of motivation. The object is to move across a screen cluttered with moving lifts, the idea being to reach as high a floor as possible. Should you manage to negotiate one floor a little yellow cube will zoom down and carry you to a new floor. The graphics, despite a neat title screen, are very ordinary. Curiously the documentation which comes with the game describes your pawn as a detective, indeed the difficulty option allows you to play either James Bond or Ruck Furd, but the character looks more like a squat John Wayne than a secret agent. Presumably a stetson is easier to depict than a PPK. It's also a game requiring very little skill, as success depends largely on the random arrangement of the moving lifts. Very ho hum. I would be well cheesed off had I shelled out hard-earned cash for it. — **S.K.**

Game: SHAFT
Maker: DRAGON DATA
Machine: DRAGON 32
Format: cassette
Price: £7.95
Rating: none



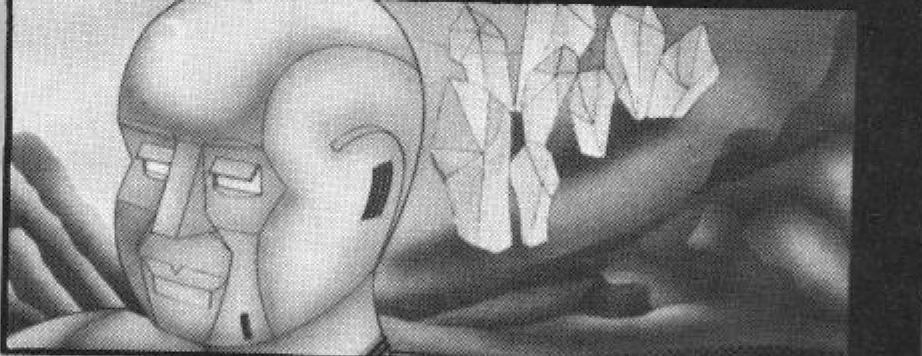


Extremely difficult successor to *Airstrike 1* — basically a very pretty Scramble-type game where you fly a heavily armed ship down a series of labyrinthine tunnels in order to reach your ultimate goal, a kind of alien oil-rig. This you then attempt to blow away in the usual style.

Excellent use has been made of the Atari 800's considerable graphics, and the by now common device of a movement window within the horizontal scroll allows you a certain freedom of movement. A very nice touch indeed is the provision of subterranean and overhead branches off the main tunnel . . . though actually getting the ship to negotiate the entrance to any one of these taxed the abilities of even the most gung-ho office denizens to the utmost (i.e. we failed to do it even once). As it stands, probably English Software's best title; though it would be nice if *Airstrike 3* (if there is one) could manage true bi-directional scrolling *à la Defender*. — **T.T.**

Game: AIRSTRIKE 2
Maker: ENGLISH SOFTWARE
Machine: ATARI 400/800
Format: cassette
Price: £9.95
Rating: KK

THESE BOOTS WERE MADE FOR ZONGING



Stop me if you've heard this one, but there was this guy running round inside a maze trying to gather treasure but being chased by all sorts of nasty creatures. What? You have heard it before? Well, here it is again!

To be fair, Krystals of Zong *is one of the better maze chase games around. There are eight levels, each with nine rooms infested by snakes, bats, spiders and mummies. The treasure is locked in central compartments accessed only by keys which must be collected from the various rooms. There are also swords which temporarily give you the power to off your pursuers.*

Surprisingly, some of this treasure is actually useful. There are potions to teleport you to other rooms or make your invisible to the nasties, boots to help you run faster (vital because this game is slow), powerful swords and more. It almost makes the hassle to get them worthwhile.

As said, the action is slow and the graphics are nothing to scream about but there are several little touches that make the game fun. These include the music and a cute little sequence whenever you get caught by a creature.

You can't judge a book by its cover so don't judge Krystals of Zong *by its theme. You might be pleasantly surprised.* — **R.B.**

Game: KRYSTALS OF ZONG
Maker: PSS
Machine: COMMODORE 64
Format: cassette
Price: £7.95
Rating: KK

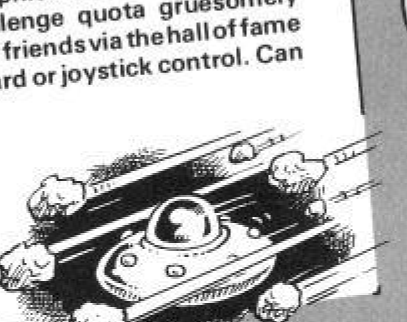
SCROLLING TO OBLIVION

It begins with deceptive calm. Ground missiles launch in predictable fashion and fuel dumps abound like *Pac Man* clones. Even with reckless flying you can rack up a healthy score ... which is just as well considering the delights in store. The first stage in this fine version of the arcade shoot 'em up is little more than a travelogue before the main feature. The action hots up considerably as you enter (cue fanfare) The Scramble System!

Always been one of my favourite genres of game, this. The *Defender*-like speed combined with a definite challenge to penetrate further is just irresistible. There are always new strategies to try as you forge on with the mission. Having nuked out the ground forces you'll enter the cavern system. Here you'll encounter UFOs. I used up countless space-fighters at this stage. Like Flash Gordon with delusions of grandeur I'd zip back and forth, releasing hails of laser fire, before the inevitable collision with a cavern wall. I eventually sussed out that the only sure way to wipe away the aliens was to hang back and fire steadily. They'd be drawn like moths to a flame and mucho damage was done with barely a flick of the wrist.

Then comes the real test, a hail of meteorites which are hard to avoid and impossible to destroy. I've yet to survive 'em and so haven't seen the fortress which I'm assured lies just around the corner. While less impressive than *Penetrator* (for the Spectrum) this remains a neat implementation of the classic game. The graphics are colourful, the scrolling smooth and the challenge quota gruesomely high. Ace pilots can brag to their friends via the hall of fame and there are options for keyboard or joystick control. Can you beat the system? — **S.K.**

Game: SKRAMBLE
Maker: MICRODEAL
Machine: DRAGON 32
Format: cassette
Price: £8.00
Rating: KK



South Georgia Captured Again!



IF YOU like arctic conditions in the comfort of your own home, then *Freez'bees* could be for you.

Percy the Penguin, stalwart of the ice cap, has his territory invaded by Snowbees and after choosing the ideal ice blocks they lay their eggs deep within them. The eggs hatch out and the young Snowbees chase poor Percy in a determined effort to kill him.

Percy is not too pleased by these Snowbees first invading his territory and then trying to kill him, so he takes evasive action by either destroying the ice blocks before the eggs hatch out, or luring them to the perimeter fence, which he has electrified, and frying them. If he fails to kill them within a certain period of time and he has not destroyed the eggs within all of the ice blocks, more hatch out and his job becomes even harder.

In one of Silversoft's best games for quite a while, good graphics and smooth playing action make this an enjoyable and original program which, whether you use keyboard or joystick, should keep you amused for some time.

Game: FREEZ'BEES
Maker: SILVERSOFT
Machine: SPECTRUM 48
Format: cassette
Price: £5.95
Rating: KK



Steal the eggs, avoid the lizard

'Twas a hard life back in the Stone Age. The loincloths were chilly, the women were rough (I think I've got that the right way around) and breakfast just wasn't worth rising for. All that running around and grunting. Sheesh!

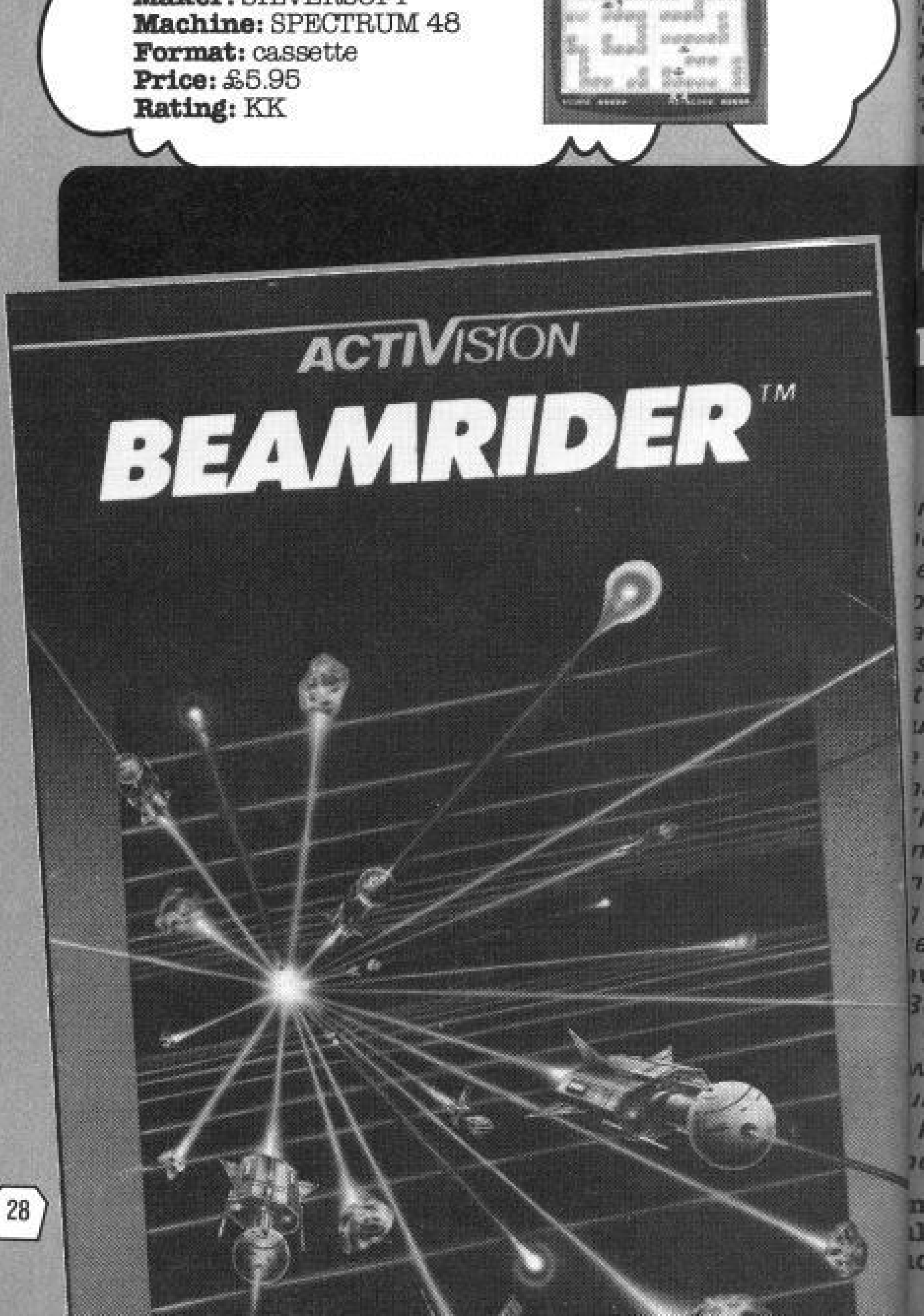
They need all the help they can get. I mean, look at Ugh, he'd be lost without us. In this refreshing twist on an old theme, you have to guide Ugh up a hillside to collect an armful of Pteranodon eggs (fry sparingly and serve with mammoth paté). Naturally the Pteranodon is far from happy about this and will try to dissuade the caveman with a shower of rocks. Hairy stuff.

Should you manage to liberate more than your fair share of *oeufs*, the irate bird will enlist the aid of an obese Tyrannosaurus Rex who'll come wobbling from the shrubbery with a fearsome scowl. A joystick really comes into its own here, as you're chased up and down the screen. The dinosaur's cavortings can be put paid to with a carefully thrown spear, but this requires much practice. I spent a great deal of the time cheerfully throwing my weapon into the bush and running carelessly into the arms of the dinosaur. Most annoying.

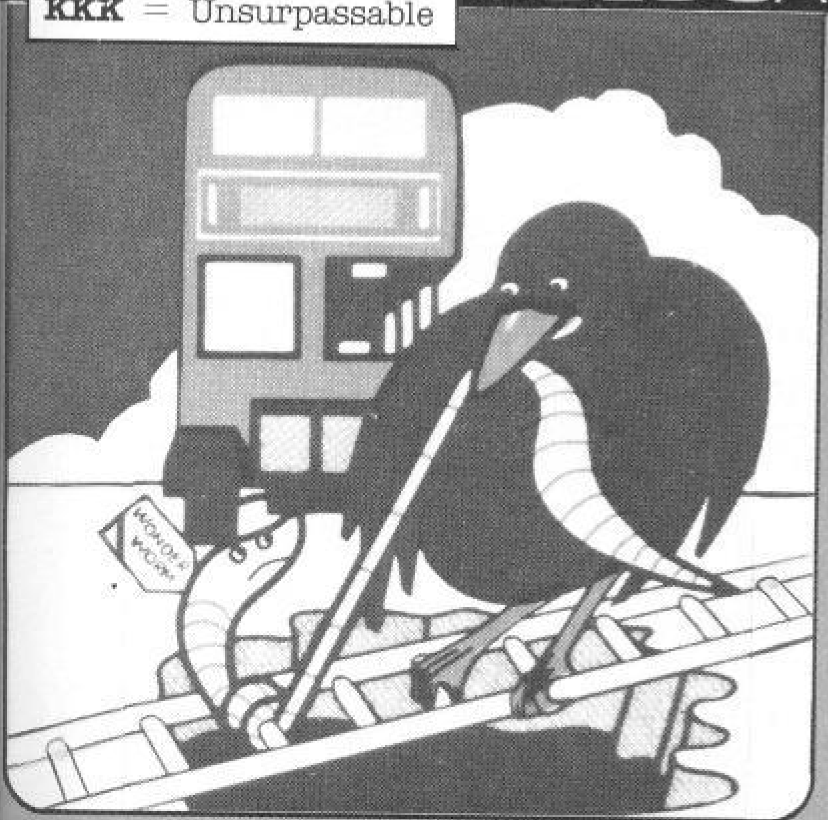
Wonderful things have been coaxed from the Welsh micro's graphics and the sound is great. I particularly liked the dull crunch when you're brained by a falling rock!

There are progressive levels of difficulty (presumably the Tyrannosaurus becomes more manic by the screen) and enough on-screen lunacy to keep you busy for weeks. Go for it! — **S.K.**

Game: UGH
Maker: SOFTEK
Machine: DRAGON 32
Format: cassette
Price: £6.95
Rating: KKK



K = Could Be Better
KK = Could Be Worse
KKK = Unsurpassable



Adventure games allow you to take on the mantle of many powerful and dynamic beings and experience strange and exciting things. But are you ready to become a worm? Not just any old worm but Wonderworm (ta, da!) who has an urgent appointment to attend his uncle's Wormsday party (more worm jokes to come). Our ductile hero must leaves his comfortable worm hole, full of wormhold items (see!) and find his way through terrible, worm-destroying hazards to the party. Despite its cutesy theme this is not an easy adventure game. Indeed, just leaving the worm hole requires some thought to find the special keyword needed to release you (and it ain't 'slither' or 'crawl'). Wonderworm runs mainly in text but has some good and amusing graphics buried within it. Most of the standard adventure game commands are recognised with LOOK and HELP being of vital use. This is a game with a sense of humour and a lot going for it. Excuse me while I work out how to avoid being eaten by a cow again. — **R.B.**

Game: WONDERWORM
Maker: HAVENSOFT
Machine: Spectrum 48K
Format: cassette
Rating: KKK

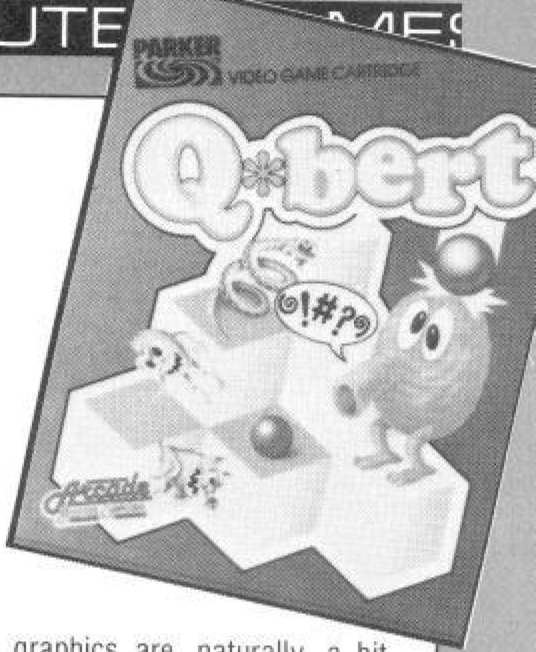
MY OATH! IT'S THE CUBE!

In the beginning there was *Pac-Man*. He was a little round character that starred in a smash-hit arcade video game. He was considered so cute that he spawned a rash of spin-off products and even got his own TV show. Then came *Q*bert*, another little round character, with a big nose and little legs. He too starred in a smash-hit video game, was considered unbearably cute and is about to get his own TV show. Moral: cute round characters sell video games. See if you agree with this home, Intellivision version of *Q*bert*.

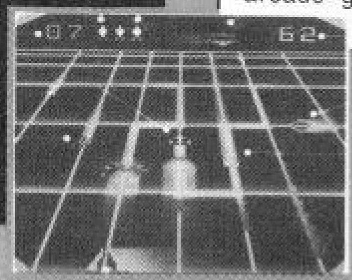
Like most good video games, the idea is deceptively simple. Hop Q*bert up and down a pyramid of '3D' cubes changing their colour as he lands on each. When the entire pyramid has been changed it all starts again, this time with a different colour. But, of course, it ain't that easy! There are 'nasties' about. They chase Q*bert all over the pyramid; red and purple balls to squash him, creatures called Ugg and Slick who jump on him and change cube colours back again, and Coily the snake. The only way Q*bert can escape his deadly coils is to hop on one of two flying discs which whisk him to safety while Coily plunges to his doom.

Compared to the original arcade game, the Intellivision graphics are, naturally, a bit coarse but otherwise this version remains remarkable faithful to the original. The flying discs spin colourfully, the sound is good — Q*bert even manages to swear convincingly whenever he is caught. From the outset control on this game is not simple as Q*bert can only hop in diagonal directions but Intellivision's infamous control discs compound this problem and make a lot of practice necessary. Once mastered, though, you'll find *Q*bert* more of a challenge than you think. Looks like another cute, round, lovable figure is about to become a home video game superstar!
R.B.

Game: Q*BERT
Maker: PARKER
Machine: INTELLIVISION
Format: ROM
Price: £34.50 or less
Rating: KK



GOOD GAME...
Embarrasing Dialect

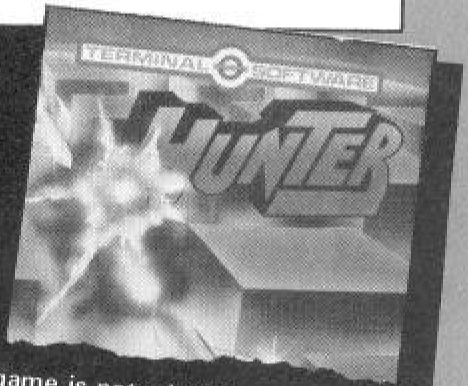


Home, home on the range, where the stars and the asteroids play . . . and who could be more at home on the range than the **Beamrider** *and his trusty laser lariat. Dang ma britches, pards, if this ain't one of the meanest space shoot-me-ups I ever did see! You've got to stop a bunch of the orneriest space owlhoots this side of the Crab Nebula takin' over the 99-level deep Restricter Shield round Earth. You can see that dang shield a-stretchin' way out in front of you. Them varmints starts as dots in the distance but come at you down the grid lines of the shield, a-growin' all the time. Wait till you see the whites of their eyes before you start a-blastin' with your laser lariat. Yihaaa! Lookit them critters run! But it ain't over yet, son. They're smart an'll soon be back a-buckin' and a-weavin' and blastin' back at you with big bombs. They'll also bring some 'friends' with 'em. Just stand your ground, son, and plug away. Send 15 of 'em to Boot Hill and you'll get a crack at their Big Boss craft. You'll need your torpedoes fer that sucker. You've only got three so make 'em count — and watch out fer them green blockers who'll draw your fire. Blast the head critter and git bonus points.*

But it don't stop there, nosirree. There's another sector and another and . . . well, the whole thing just gits faster and faster with a whole passel of new dangers. This here **Beamrider's** *a purdy-lookin' game with mighty fine sound. Up to four of you rannies kin play and there's action a-plenty fer all. So long, pards, I gotta go save the rest of them 98 sectors. Beam me up, Kincaid.* — R.B.

Game: BEAMRIDER
Maker: ACTIVISION
Machine: INTELLIVISION
Format: ROM
Price: £24.95
Rating: KKK

He could have had a Bounty



Don't be fooled! This game is not what it appears! I thought I had at last discovered Games Reviewers' Paradise in *Hunter*. That place where games don't scream at you all the time or sear your eyes with primary colours. On the screen graceful, bird-like shapes floated serenely round a grid pattern. Soft, pastel colour tantilised my senses. I had control of what looked like a yellow Vulcan bomber. As I moved off round the grid the shapes wafted after me, moving gently through the rows. I potted a few easily, the next couple were a little more tricky and the last one almost defied destruction. On the next screen the shapes began to exhibit almost animal cunning — weaving, moving faster. A sneak attack took out two of my lives. I could feel the prickly sensation of tension building within me. By about the fourth screen the terrible realisation dawned — there was *intelligence* in this program! The bird-vermin were moving faster and showing lightning reflexes at avoiding my fire. I, the hunter, was being hunted! Curse you, Terminal! Curse your incredibly smooth graphics, great sound and addictive gameplay. I'm shattered . . . paradise has been lost. — R.B.

Game: HUNTER
Maker: TERMINAL SOFTWARE
Machine: COMMODORE 64
Format: cassette
Price: £7.95
Rating: KKK

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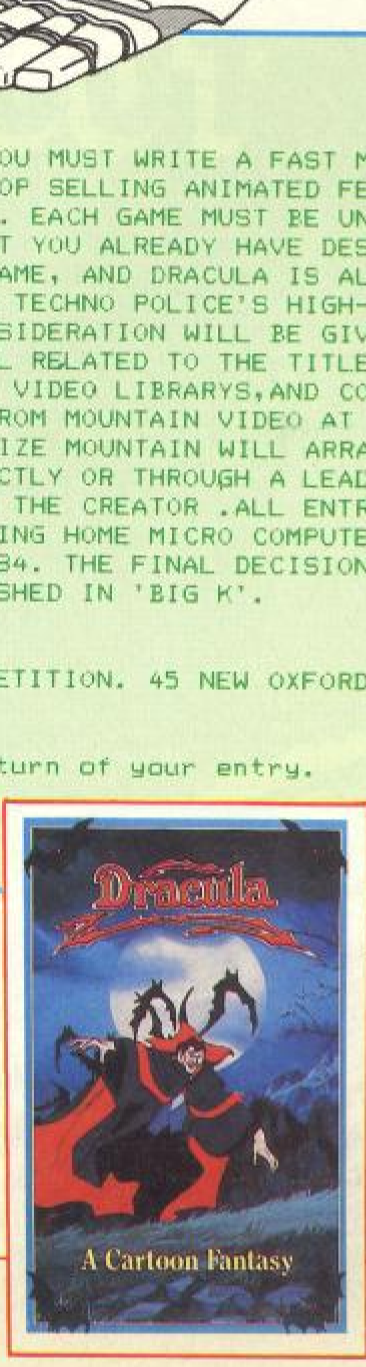


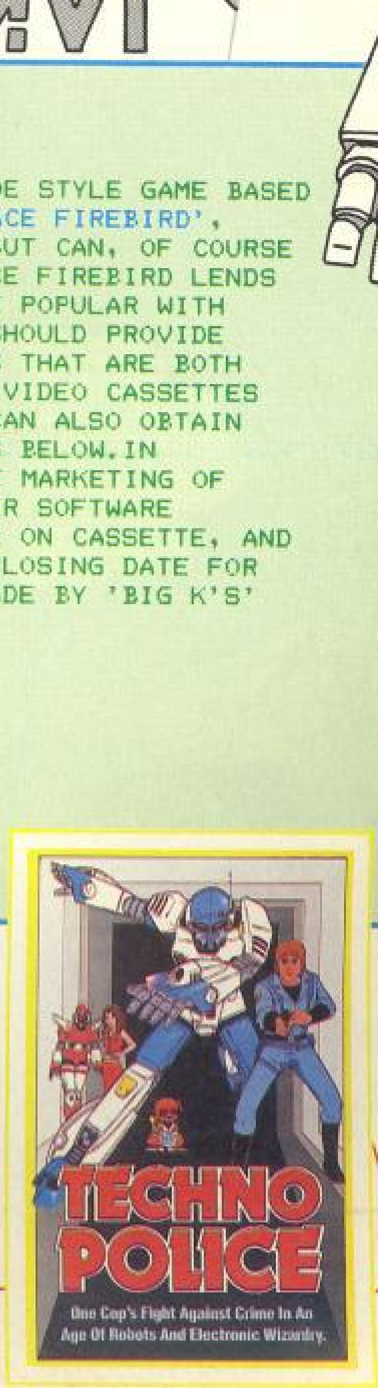
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PROGRAM EVERY MOUNTAIN

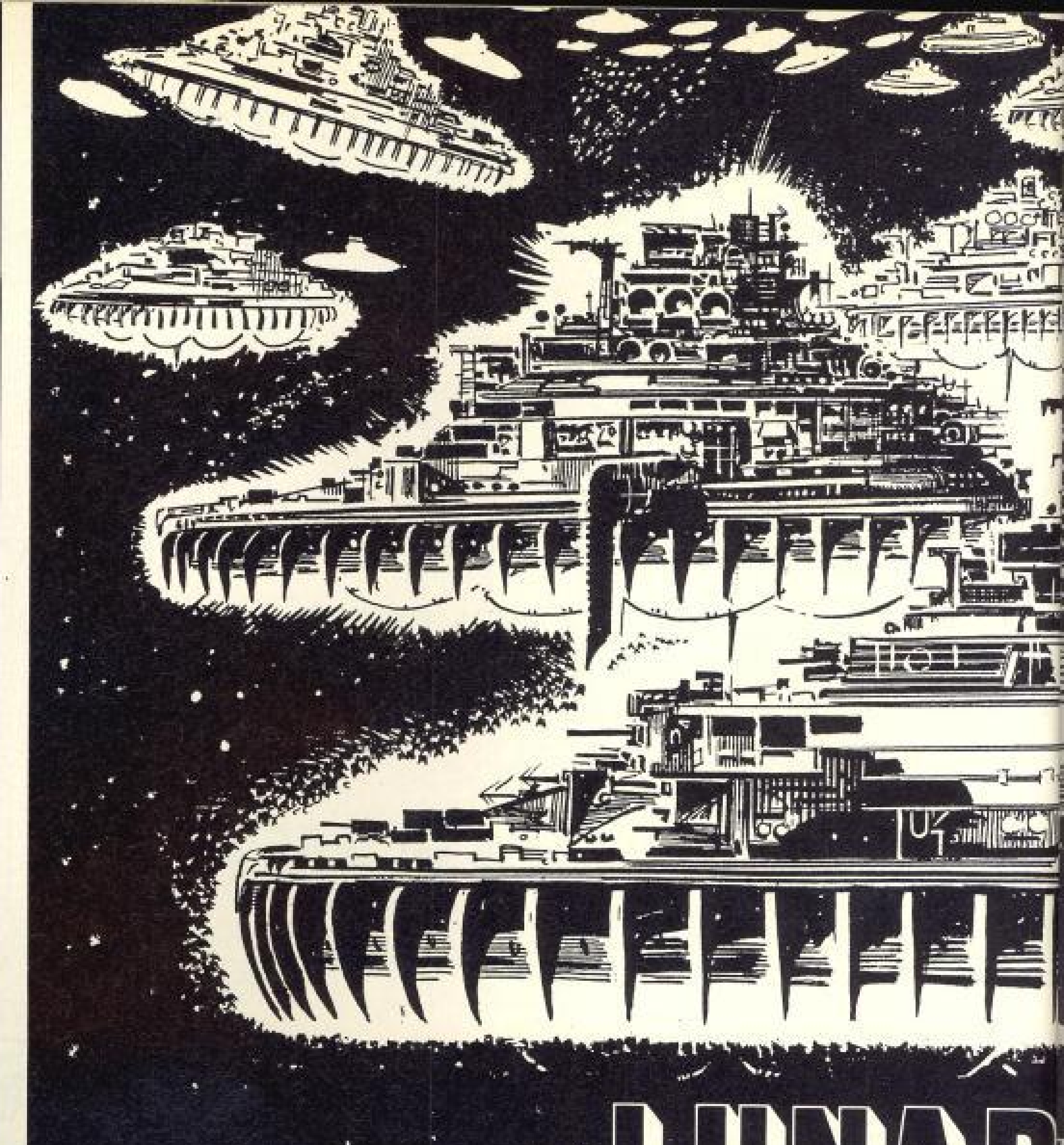
PROGRAMMERS out there eager to score a Commodore 64 plus peripherals can have their chance — Mountain Video (the animation specialists) are organising a competition with £1,000 worth of said equipment as the overall prize.

All the tempted tapper has to do is design a game program to complement any of Mountain's three top-selling animated cartoon videos: **Techno Police** and **Space Firebird**, two amazing sci-fi offerings from the Land of the Rising Sun and **Dracula**, an amimated adaptation of a contemporary story featuring that well-known bloodsucker, star of stage, screen and video games.

Mountain Supremo Daniel Brant assures Big K that his company will either market the prizewinning game themselves or arrange for its marketing — with full credit, royalties, etc., for the lucky winner. Closing date for entries will be Monday May 30.

Entry forms available from: Judy Sergeant, Mountain Video (Special Projects, 45 New Oxford St., London WC1.





LUNAR TOUCHDOWN

by JONATHAN BUL
for COMMODORE 6



```
0 NM$="THARG":HS=1000:F=30:GOSUB 9000
  :GOSUB 11500
5 DIM HY(23)
10 GP=.4:DIM MN(21):F$(21):LV=1:Z=2
  :POKE 53280,0:POKE 53281,0
  :GOSUB 9700
15 PRINT"[CLEAR]■";:GOSUB 9300
  :POKE 53280,0:POKE 53281,0
20 VH=52:POKE V+16,8:C8=1:F=100
  :POKE V+21,15:IF PEEK(V+31)=1 THEN
  GOTO 20
100 EE=PEEK(203):IF EE=64 THEN A=0
  :D=GP:F1=0
110 IF EE=23 THEN A=1:D=.07:F1=.3
120 IF EE=12 THEN A=-1:D=.07:F1=.3
130 IF EE=4 THEN D=-.05:A=0:F1=.45
140 IF EE=5 THEN D=-.1:A=0:F1=.6
150 IF EE=6 THEN D=-.19:A=0:F1=.8
160 IF EE=3 THEN D=-.3:A=0:F1=1.2
180 POKE AD,9:POKE WF,17:POKE 54296,15
190 IF G>0 AND G<255 THEN POKE HF,G*10
  :POKE LF,129
195 IF G<0 AND G<255 THEN POKE HF,
  -G*10:POKE LF,129
200 G=G+D:IF G>=3.8 THEN G=3.8
202 IF G<=-3.8 THEN G=-3.8
250 Y=Y+G:POKE V+1,Y:IF Y<=4 THEN GOT
  O 5100
260 X=X+A:POKE V,X
270 F=F-F1:IF F<=0 THEN GOTO 5000
275 DK=PEEK(V+31)
277 IF DK=1 OR DK=9 THEN GOTO 1000
278 POKE WF,0
280 IF PEEK(V+31)=1 OR PEEK(V+31)=9 T
  HEN GOTO 1000
300 G$=STR$(G):IF LEN(G$)>5 THEN G$=L
  EFT$(G$,5)
305 R4=17:R1=10:R2=128:R3=10
  :GOSUB 6000
310 PRINT"[HOME,DOWN24]";SPC(24);"
  [RVS,YELLOW]SPEED:";G$;
320 PRINT"[HOME,DOWN24]";"[RVS]FUEL
  [RVOFF]";F$(INT(F/5));" ";
330 OO=PEEK(V+30)
350 POKE V+2,X1:X1=X1+Z
  :IF X1>=240 THEN X1=239:Z=-2
355 IF X1<=34 THEN X1=35:Z=2
```



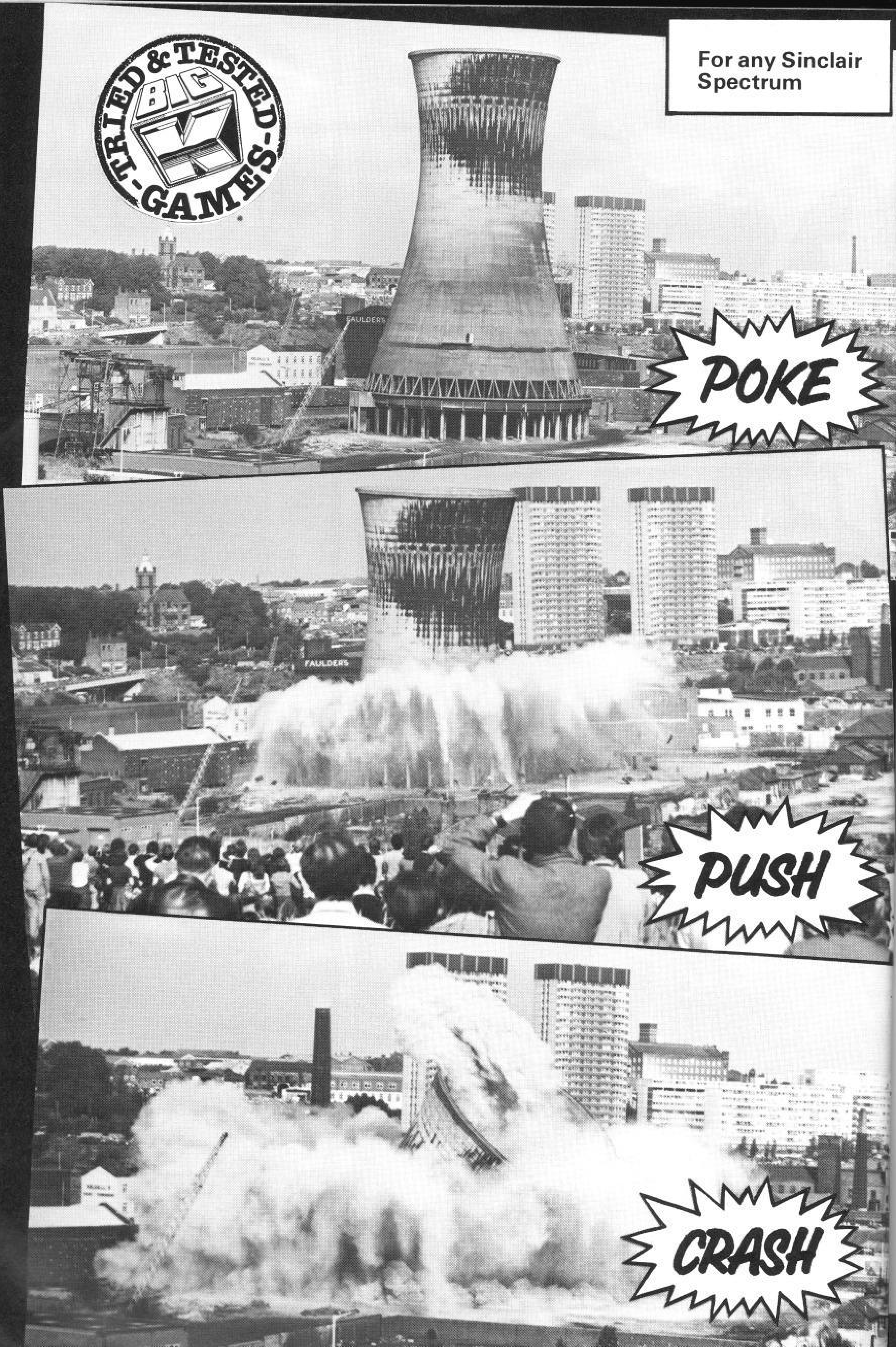
AR
WN
BULL
RE 64

They came from out of space to answer the desperate call for rescue: humanoids trapped on a lonely moon and menaced by a monster. One by one the giant ships swooped in to release their lander craft. The craft had to find a way to get to the humans — a thou off course meant destruction. Many were destroyed in the attempt but one got through. Will you be piloting that craft? Type in this amazing program and fight out if you've got The Right Stuff.

```
$ 9000
Z=2
1 THEN
A=0
.3
=.3
.45
6
.2
4296,13
HF,G*10
HF,
EN GOT
00
000
)=9 T
 G#=L
:"
FUEL
```

```
400 YH=YH-HY:POKE V+6,INT(YH)
   :IF YH<=MN(LV)AND CB=0 THEN GOTO 5
   300
410 IF YH<=1.5 AND CB=1 THEN POKE V+1
   6,0:YH=255:CB=0
900 GOTO 100
1000 IF G>1 OR G<=-1 THEN GOTO 1010
1005 GOTO 1100
1010 FOR N=1 TO 30:POKE 2040,13
   :POKE 2040,15:R1=INT(RND(1)*50)
   :R2=20:R3=4:R4=33
1025 GOSUB 6000:NEXT N:FOR N=1 TO 1500
   :NEXT:PRINT"[CLEAR]":GOTO 11000
1100 O=PEEK(V+30)
1110 IF O=5 OR O=5+8 THEN SC=SC+1000
   :GOTO 1200
1120 FOR N=Y TO 95 STEP-1:POKE V+1,N
   :R1=35:R2=240:R3=2:R4=17:GOSUB 6000
1122 NEXT N:F=100:G=-.2:D=-1:Y=N
1125 IF PEEK(V+31)=0 THEN GOTO 100
1126 GOTO 1125
1200 POKE V+21,3:FOR N=Y TO 110 STEP-1
   :POKE V+1,N:FOR T=1 TO 15:NEXT T
   :NEXT N:Y=N
1210 IF X<X1 THEN FOR N=X TO X1+10
   :POKE V,N:FOR T=1 TO 15:NEXT T
   :NEXT N:X=N:GOTO 1220
1215 FOR N=X TO X1+10 STEP-1:POKE V,N
   :FOR T=1 TO 15:NEXT T:NEXT N:X=N
1220 FOR N=Y TO 76 STEP-1:POKE V+1,N
   :FOR T=1 TO 15:NEXT T:NEXT N:Y=N
1230 LV$=STR$(LV):PRINT"[HOME,DOWN9,
   RIGHT10,RVS,ER.END]LEVEL ";LV$;"
   [RVS] COMPLETED[RVOFF]"
1240 LV=LV+1:SC=SC+1000
1262 FOR N=F TO 0 STEP-1
1265 PRINT"[YELLOW,HOME,DOWN24]":"
   [RVS]FUEL [RVOFF]";F$(INT(N/5));"
   ":SC=SC+5
1267 R1=INT(N/5):R2=23:R3=3:R4=17
   :GOSUB 6000:NEXT N
1268 FOR N=1 TO 100:NEXT
1270 FOR N=0 TO 100
1275 PRINT"[HOME,DOWN24]";"[RVS]FUEL
   [RVOFF]";F$(INT(N/5));" ";
1277 R1=INT(N/5):R2=23:R3=3:R4=17
   :GOSUB 6000:NEXT N:F=100
1300 FOR N=1 TO 100:NEXT
1350 PRINT"[HOME,DOWN9,RIGHT10]
                   "
1360 POKE V+5,213:POKE V+4,MN(LV)
   :POKE V+21,15:GP=GP+.3:HY=HY(LV)
1400 GOTO 20
5000 PRINT"[HOME,DOWN2,RIGHT7,RVS,
   CYAN]OUT OF FUEL.[RVOFF]"
   :POKE V+21,0
5010 FOR N=1 TO 2000:NEXT N:GOTO 11000
5100 POKE V+21,0:PRINT"[HOME,DOWN2,
   RIGHT7,RVS]YOU FLEW OFF INTO SPAC
   E.[RVOFF]"
5110 FOR N=1 TO 2000:NEXT N:GOTO 11000
5300 FOR N=YH TO 1 STEP-1:POKE V+6,N
   :POKE V+4,N+4:R1=N:R2=125:R3=5
   :R4=17:GOSUB 6000:NEXT N
5310 POKE V+21,0:PRINT"[HOME,DOWN2,
   RIGHT5,RVS]THE YEHTI GOT THERE FIR
   ST.[RVOFF]"
5320 FOR N=1 TO 2000:NEXT N
   :PRINT"[CLEAR]":GOTO 11000
6000 POKE WF,0:POKE HF,R1:POKE LF,R2
   :FOR T=1 TO R3:POKE WF,R4:POKE WF,0
   :NEXT T:RETURN
8700 PRINT"[CLEAR,DOWN3]
   YOU HAVE ACHIEVED THE HIGHEST SCOR
   E"
8710 PRINT"[DOWN]TODAY PLEASE ENTER Y
   OU NAME."
8720 INPUT"[DOWN,RVS]NAME [RVOFF]";NM$
   :HS=SC:RETURN
9000 POKE 2040,13:POKE 2041,11
   :POKE 2042,14:POKE 2043,14
9010 V=53248:POKE V+27,13
9020 POKE V+39,1:POKE V+40,2
   :POKE V+41,5
9100 FOR N=0 TO 62:READ A:POKE 832+N,A
   :NEXT
9110 FOR N=0 TO 62:READ A:POKE 704+N,A
   :NEXT
9115 FOR N=0 TO 62:READ A:POKE 896+N,A
   :NEXT
9117 FOR N=0 TO 62:READ A:POKE 960+N,A
   :NEXT
9120 POKE V,81:POKE V+1,76:POKE V+2,70
   :POKE V+3,57:POKE V+4,72
   :POKE V+5,213
9125 X=81:Y=76:X1=70
9126 POKE V+6,30:POKE V+16,8
   :POKE V+7,213:YH=255
9130 POKE V+23,2:POKE V+29,2:RETURN
9500 PRINT"[CLEAR,DOWN20]"
9510 PRINT"[RVS]          [RVOFF]
                         [RVS]    ◥
   [RVOFF] [RVS]◤  [RVOFF]"
9520 PRINT"[RVS]          [RVOFF]
   ◤                        ◥[RVS]
         [RVOFF]"
9530 PRINT"[RVS]  [RVOFF]◤ ◥[RVS]
   [RVOFF]◤          [RVS] [RVOFF]◤
   [RVS]◥[RVOFF]               [RVS]
        [RVOFF]"
9540 PRINT"[RVS]   [RVOFF]
   [RVS]  [RVOFF] [RVS]  [RVOFF]
   [RVS]  [RVOFF]◤       [RVS]
   [RVOFF]"
9550 PRINT"[RVS]   [RVOFF]
   [RVS]  [RVOFF]◤[RVS]  [RVOFF]
   ◤    ◥[RVS] [RVOFF]      [RVS]
          [RVOFF]"
9560 PRINT"[RVS]     [RVOFF]
   [RVS]  ◥ [RVOFF]      [RVS]
   [RVOFF]    [RVS]          [RVOFF]"
9570 PRINT"[RVS]     [RVOFF]
   [RVS]      [RVOFF]      [RVS]
   [RVOFF]◤   ◥[RVS]          [RVOFF]"
9580 PRINT"[RVS]    [RVOFF]◤       ◥
   [RVS]      [RVOFF]     [RVS]
   [RVOFF]      ◥[RVS]    [RVOFF]◤[RVS]
      [RVOFF]"
9590 PRINT"[RVS]    [RVOFF]
   [RVS]  [RVOFF]◤ ◥[RVS] [RVOFF]
   ◤    ◥[RVS]   [RVOFF]       [RVS]
   [RVOFF]◤ [RVS]   [RVOFF]"
9600 PRINT"[RVS]   [RVOFF]◤       [RVS]
      [RVOFF] [RVS]   [RVOFF]
   [RVS]   [RVOFF]◤             [RVS]
   [RVOFF]"
9610 PRINT"[RVS]
                      [RVOFF]":RETURN
9700 READ HY(1),HY(2),HY(3)
   :FOR N=4 TO 20 STEP 3
   :HY(N)=HY(N-3)+.4:HY(N+1)=HY(N+1-3
   )+.3
9701 HY(N+2)=HY(N+2-3)+.2:NEXT
9705 READ MN(1),MN(2),MN(3)
   :FOR N=4 TO 20 STEP 3:MN(N)=MN(1)
   :MN(N+1)=MN(2)
9710 MN(N+2)=MN(3):NEXT
9800 F$(0)="[RVS]E[RVOFF]":F$(1)="▪"
   :F$(2)="▬":F$(3)="▬ "
9810 H=1:FOR N=4 TO 20 STEP 2:H=H+1
   :FOR T=1 TO H:F$(N)=F$(N)+F$(2)
   :NEXT T
9815 F$(N+1)=F$(N)+"▪"
9820 F$(N)=F$(N)+" ":NEXT N
9830 READ YD(1),YD(2),YD(3)
9840 POKE 54296,15:AD=54277:WF=54276
   :HF=54273:LF=54272
9999 HY=HY(LV):RETURN
10000 DATA 48,126,12,72,66,18,75,219,
   210,206,195,115,28,255,56,31,255,
   248,63
10001 DATA 255,252
10010 DATA 104,198,46,232,198,47,232,
   198,47,255,255,255,112,0,30,63,255,
   252
10011 DATA 31,255,248
10020 DATA 15,110,240,3,231,192,1,195,
   128,0,129,0,0,129,0,0,129,0,3,231,
   192
10030 DATA 28,0,56,127,255,254,125,85,
   126,127,255,254,248,129,31,240,129,
   15,240
10031 DATA 129,15
10040 DATA 127,255,254,120,0,30,120,0,
   30,112,0,14,112,0,14,112,0,14,112,
   0,14
10050 DATA 112,0,14,240,0,15,240,0,15,
   240,0,15,144,0,9,144,0,9,248,0,31
10060 DATA 0,0,0,0,0,0,0,0,0,0,0,0,
   0,0,0,0,0,0,0,0
10070 DATA 0,0,0,0,0,0,0,0,0,0,0,0,
   16,0,27,144,0,11,144,0
10080 DATA 9,16,0,15,240,0,3,128,0,3,
   128,0,2,128,0,2,128,0,6,192,0
10090 DATA 1,0,8,32,68,128,128,0,0,59,
   209,159,34,82,68,34,82,68,59,211,
   197
10100 DATA 138,18,68,10,18,68,58,26,
   68,0,0,0,8,0,41,132,0,128,64,137,8
10110 DATA 16,1,1,2,0,8,35,255,228,35,
   255,226,31,255,248,127,255,252,255,
   255,255
10200 DATA 1.5,.4,.1,72,175,240,.6,.4,
   .2
11000 POKE 53280,15:POKE 53281,15
   :POKE V+21,0:PRINT"[BLACK]"
11010 GET A$:IF A$<>""GOTO 11010
11020 IF SC>HS THEN GOSUB 8700
11030 GOSUB 11500:GOTO 15
11500 POKE 53280,11:POKE 53281,11
   :PRINT"[YELLOW]"
11505 PRINT"[CLEAR]              [RVS]
   HIGH-SCORE";HS
11510 PRINT"[DOWN15,RIGHT,RVS]
   TODAYS EXPERT IS ";NM$;"[DOWN]"
11515 PRINT"[YELLOW]╭────────────────
   ───────────────╮"
11520 PRINT"|[BLACK]USE KEYS Z & X TO
   MOVE LEFT & RIGHT[YELLOW]  |"
11525 PRINT"|
               |"
11530 PRINT"|[BLACK]THE FUNCTION PROV
   IDE THRUST [RVS]F1 MIN[RVOFF]
   [YELLOW] |"
11540 PRINT"|[BLACK]
            [RVS]F4 MAX[RVOFF]
   [YELLOW] |"
11550 PRINT"╰────────────────
   ──────────────╯"
11620 PRINT"[HOME,DOWN24,RVS]
   WRITTEN BY JON BULL (C) 1983
       [HOME,ER.END]";
11630 POKE 1024+999,160
   :POKE 1024+999+54272,7:POKE 2040,13
11640 POKE V+40,4:POKE V+3,57
   :POKE V+21,2
11650 FOR N=0 TO 55:POKE V+2,N
   :FOR T=1 TO P:NEXT T
11652 GET K$:IF K$="S"THEN GOTO 13000
11655 NEXT N
11670 FOR T=1 TO 900:NEXT
   :PRINT"[RVOFF,HOME,DOWN4]
              MOTHER SHIP":X1=N
   :Y1=57
11740 POKE V+1,110:POKE V,0
   :POKE V+21,3:POKE V+39,5
11750 FOR N=0 TO 68:POKE V,N
   :FOR T=1 TO P:NEXT T:GET K$
   :IF K$="S"THEN 13000
11755 NEXT N
11770 FOR T=1 TO 900:NEXT
   :PRINT"[RVOFF,HOME,DOWN8]
              PLAYERS CRAFT":X2=N
   :Y2=110
11840 POKE V+5,130:POKE V+21,7
   :POKE V+41,3
11850 FOR N=0 TO 68:POKE V+4,N
   :FOR T=1 TO P:NEXT T:GET K$
   :IF K$="S"THEN 13000
11855 NEXT N
11870 FOR T=1 TO 900:NEXT
   :PRINT"[RVOFF,HOME,DOWN12]
              HUMANOID[CYAN]":X3=N
   :Y3=130
12000 FOR NT=1 TO 2000:NEXT
12010 FOR N=Y2 TO Y3:POKE V+1,N
   :FOR T=1 TO P:NEXT T:GET K$
   :IF K$="S"THEN 13000
12015 NEXT N
12020 FOR T=1 TO P:NEXT T:POKE V+21,3
12030 FOR N=Y3 TO 77 STEP-1:POKE V+1,N
   :FOR T=1 TO P:NEXT T:NEXT N
12040 X1=X1-1:X2=X2-1:IF X1=0 OR X2=0
   THEN POKE V+21,0:GOTO 12070
12050 POKE V,X2:POKE V+2,X1
   :FOR T=1 TO P:NEXT T
12060 GOTO 12040
12070 PRINT"[HOME,DOWN3]";
12075 PRINT"[RVS]THE IDEA OF THE GAME
   IS TO RESCUE AS "
12080 PRINT"[RVS]MANY HUMANOIDS AS PO
   SSIBLE WITHOUT    "
12090 PRINT"[RVS]CRASHING,
   BEFORE THE HUMANOID IS EATEN"
12100 PRINT"[RVS]BY THE HOSTILE  MOON
   YEHTI.          "
12110 PRINT"[RVS]
                   "
12120 PRINT"[RVS] YOUR SPEED MUST BE
   BETWEEN 1 & -1   "
12130 PRINT"[RVS] TO MAKE A SAFE LAND
   ING.            "
12140 PRINT"[RVS]
                   "
12150 PRINT"[RVS]LANDING ANYWERE AWAR
   DS A FREE REFUEL."
12160 PRINT"[RVS]THE GRAVITY OF THE P
   LANET INCREASES  "
12170 PRINT"[RVS]AFTER EACH RESCUE.
                   "
12175 PRINT"[RVS]     PRESS 'S' TO ST
   ART[CYAN]"
12180 GET K$:IF K$<>"S"THEN 12180
13000 POKE V+21,0:POKE V,81
   :POKE V+39,1:POKE V+40,2
   :POKE V+41,5:POKE V+1,76:Y=76:X=81
   :X1=70
13010 POKE V+2,70:POKE V+3,57
   :POKE V+4,72:POKE V+5,213
   :POKE V+1,76:X1=70
13020 POKE V+6,30:POKE V+16,8
   :POKE V+7,213:YH=255:POKE 2040,13
13030 POKE V+23,2:POKE V+29,2
   :PRINT"[CLEAR]":POKE V+21,0:RETURN
```

For any Sinclair Spectrum



A fiendishly cunning strategy game for 2-4 players. Grab your bricks as they come down the chute and out-build your opponents by hemming them in. Last one in plays Yosser Hughes . . . can you do this job?

by Antony Trenker

H-BLOC

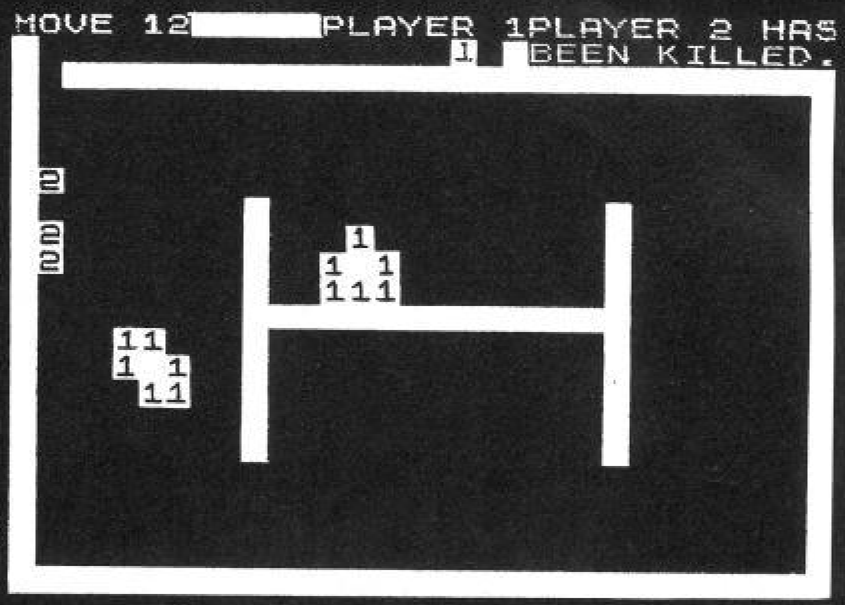
GAME NOTES

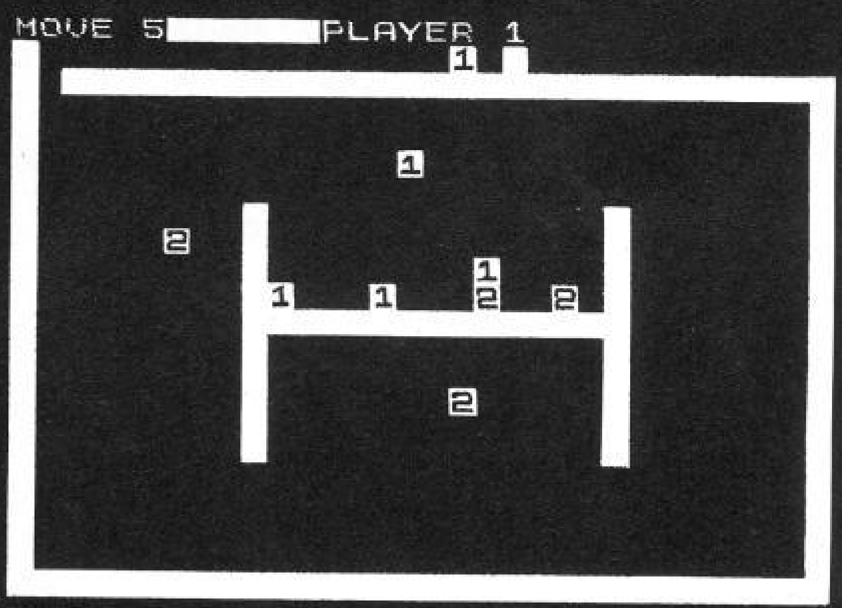
You must simply surround another player's brick with your own. If there is a space or a wall on one side the player cannot be surrounded. He will only die if he is surrounded by four other bricks. You can also surround yourself, so beware!

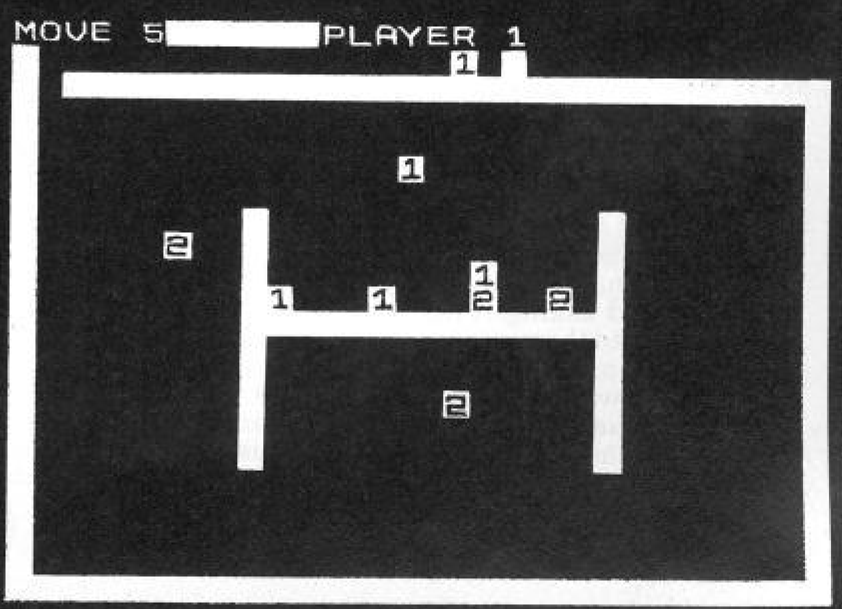
You can play safe by putting your bricks near the edge of the walls or form a ring of bricks with a space on the centre. The four in the ring can't be surrounded but can surround others.

You can play a risky game by luring other players into squares which they think will surround you but actually surround them.

```
   1 REM COPYRIGHT ©
         ANTONY TRENKER
         1983
   5 BORDER 0: PAPER 0: INK 0
   7 CLS
   9 GO SUB 900
  10 LET d=1: LET a=17
  20 PRINT AT 1,17; INK p+2; INV
ERSE 1;p
  30 PRINT AT 0,0; PAPER 7;"MOVE
 ";AT 0,5;m;AT 0,12;"PLAYER ";p
  40 BEEP .1,40
 100 IF INKEY$="0" THEN IF d>3 T
HEN BEEP .1,-10: GO TO 200
 110 IF INKEY$="5" THEN IF ATTR
(d,a-1)=0 THEN PRINT AT d,a;" ":
 LET a=a-1: PRINT AT d.a: INK p+
2; INVERSE 1;p
 120 IF INKEY$="8" THEN IF ATTR
(d,a+1)=0 THEN PRINT AT d,a;" ":
 LET a=a+1: PRINT AT d,a; INK p+
2; INVERSE 1;p
 130 IF INKEY$="7" THEN IF ATTR
(d-1,a)=0 THEN PRINT AT d,a;" ":
 LET d=d-1: PRINT AT d,a; INK p+
2; INVERSE 1;p
 140 IF INKEY$="6" THEN IF ATTR
(d+1,a)=0 THEN PRINT AT d,a;" ":
 LET d=d+1: PRINT AT d,a; INK p+
2; INVERSE 1;p
 150 IF INKEY$="q" THEN STOP
 190 GO TO 100
 200 LET p=p+1
 210 IF p=no+1 THEN LET p=1: LET
m=m+1
 220 IF d(p)=1 THEN GO TO 200
 300 RESTORE 998: FOR s=1 TO 4
 310 READ o,c: LET o=d+o: LET c=
a+c
 315 IF ATTR (o,c)=0 OR ATTR (o,
c)=7 THEN GO TO 350
 320 IF ATTR (o-1,c)=0 OR ATTR (
o-1,c)=7 OR ATTR (o+1,c)=0 OR AT
TR (o+1,c)=7 OR ATTR (o,c-1)=0 O
R ATTR (o,c-1)=7 OR ATTR (o,c+1)
=0 OR ATTR (o,c+1)=7 THEN GO TO
350
 330 GO TO 800
 350 NEXT s
 390 GO TO 10
 800 LET d((ATTR (o,c))-2)=1
 820 PRINT AT 0,20; INK 7; PAPER
 1;"PLAYER ";(ATTR (o,c)-2);" HA
S";AT 1,20;"BEEN KILLED."
 830 BEEP 1,-40
 850 PRINT AT o,c; INK 7;"█"
 860 LET p=p+1
 870 IF p=no+1 THEN LET p=1
 880 IF d(p)=1 THEN GO TO 860
 890 GO TO 10
 900 PRINT AT 2,0; INK 7;"█";AT
2,2;"██████████████████████████████
██"
 910 PRINT AT 21,0; INK 7;"█████
███████████████████████████"
 920 FOR d=3 TO 20
 922 PRINT AT d,0; INK 7;"█";AT
d,31;"█"
 925 NEXT d
 930 PRINT AT 1,0; INK 7;"█";AT
1,19;"█"
 932 PRINT AT 0,0; INK 7;"██████
██████"
 940 FOR d=7 TO 16
 942 PRINT AT d,9; INK 7;"█";AT
d,23;"█"
 944 NEXT d
 950 PRINT AT 11,10; INK 7;"█████
█████████"
 960 LET p=1
 970 INPUT INK 4;"NUMBER OF PEOP
LE PLAYING ";no
 972 IF no>4 OR no<2 THEN GO TO
970
 974 DIM d(no)
 980 LET m=1
 998 DATA -1,0,0,1,1,0,0,-1
 999 GO TO 10
```









A BRIT TAKES ON THE YANKS' GAME





THE AMERICANS must be feeling pretty sick. In rock music, films, TV and now computer gaming, the spirit of True Brit is showing. Now Atari has chosen a BritProg for its first international release. Big K managed too track down the history-making Briton . . .

JUSTIN WHITTAKER is a tall, bespectacled 18 year-old from Staplehurst in Kent. He exhibits a calm self-assurance ("I decided that I'd write a hit game") and realistic attitude ("I wouldn't recommend that anyone else leaves school at 16 and starts writing software, they could be very disappointed") towards his work. All this is reflected in *The Lone Raider*, Justin's first game; a skilful blend of action, excitement and good play values, utilising the excellent sound and graphics capabilities of the Atari Home Computer.

Justin's computer interest began at school with computer studies, a subject he didn't feel he was doing as well as he should in. So he went out and bought a ZX81 to help. Through this he learnt programming and began writing his own programs straight away. He left school when he was 16 with a career as a programmer firmly in his sights. But it wasn't that easy. A long round of fruitless interviews left him with a lot of spare time on his hands and, by this time, an Atari 800 to play with. It was then he decided to write his "hit game".

THE THEME'S THE THING

Weeks were spent thinking up ideas. "Eventually I came up with the idea of — instead of just having a game, which is pretty meaningless — to actually provide a theme. I chose raiding a factory. So I designed the first screen of the game around getting into the factory, the middle screen doing the raiding and the last screen getting out again. I built the game round that."

Four or five months of off and on work passed before the game was complete. Justin then wrote to Atari's U.K. HQ telling them about the game and asking if he could show it to them.

Why Atari and not some British software house? "Because I had an Atari computer," was the simple reply. Oh.

Atari agreed to see the game and Justin journeyed up to their Slough offices to show it to them.

"They were struck by it the moment they saw it," he says modestly. "Almost on the first day they said the would release it." At that time, like many others writing independently for the Atari, all Justin could hope for was his game to be put out by the APX (Atari Program Exchange), a service available only to Atari owners. Then a few weeks later came the surprising news that *The Lone Raider* was going out 'mainline' with the rest of Atari's catalogue.

"I was dumbfounded," says Justin. "It was fantastic because, up to then, everything was so select with all the mainline stuff being written in America. Everybody says that the Americans are best and all that but I'm sure the British can do just as well."

Atari agreed to pay Justin a royalty on each copy sold in return for holding copyright and *The Lone Raider* was launched with great ceremony at the end of October, 1983. Initially the game is only on sale throughout Europe through Atari International, but hopes are high for an eventual U.S. release.

THE GAME'S THE THING

The Lone Raider is a three-stage game. On the first screen the Raider is beamed down from his mothership and must destroy all the robot guards to enter the power factory.

There are ten ranks to work through. The first five can be selected but the last five must be taken in sequence. Unlike some games *Raider* isn't endless. If you can beat the tenth rank ("almost impossible" says Justin) there is a special message and tune waiting. But nobody has done it yet, including Justin, who claims only to have cracked it ". . . by cheating"!

THE SOUND'S THE THING

The Lone Raider is an immensely 'playable' game involving the need for good tactics as well as reflexes. Sound is remarkable though the graphics are surprisingly simple for such a machine. "Some people write a game round a graphic technique," Justin explained. "They don't care about the play value. That isn't the way to do it. Sound is one of the most important things in games because it affects your subconscious as opposed to anything else. You can't ignore it. In the second level of my game the droning sound really gets you sweating!"

As is fairly clear by now, Justin is a big fan of Atari computers. "They're fantastic," he says. "You can never really master an Atari because there are lots of little things hidden inside. You can get 255 colours on the screen at once — what other micro can do that? There's just so much potential that's not realised."

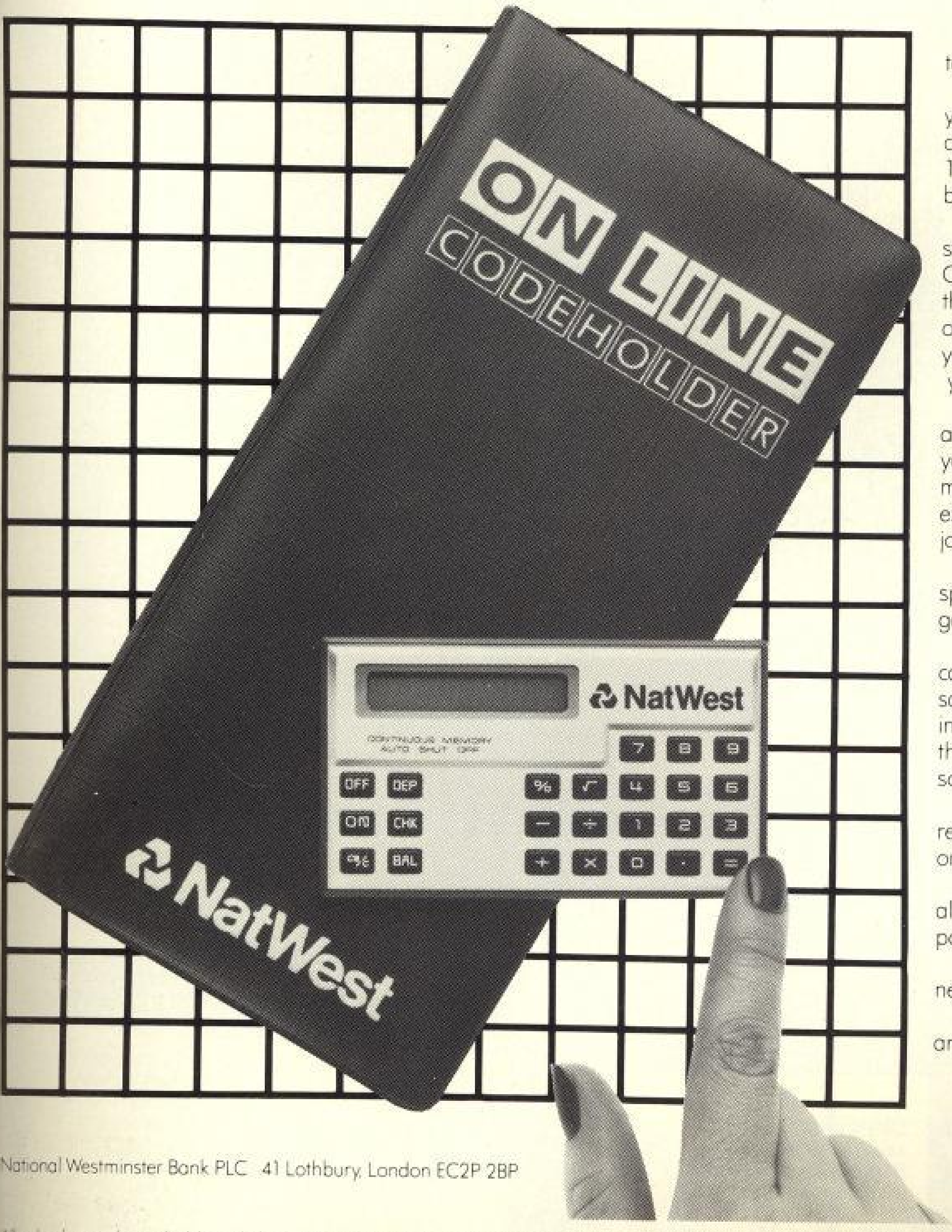
Okay, so how about a few tips for Big K readers, Justin? "Get a book called *De Re Atari* by Chris Crawford. If you've got an Atari micro you think you've just got a basic micro. When you read that book your mind will be blown when you realise what you've really got your hands on!"

Justin was 17 when *The Lone Raider* was released last year. He's now 18 and a freelance programmer working on converting some of Atari's most popular games to other home micros for the new Atarisoft range. When Big K spoke to him he was working on *Dig Dug* for the BBC and Electron.

But what about a follow-up to *Raider?* That'll be in the works very soon and Justin is saying nothing about it other than it will be an arcade-style game. Fine. When you're a 'lone raider' taking on the awesome task of cracking the American grip on software, you're entitled to a few secrets!

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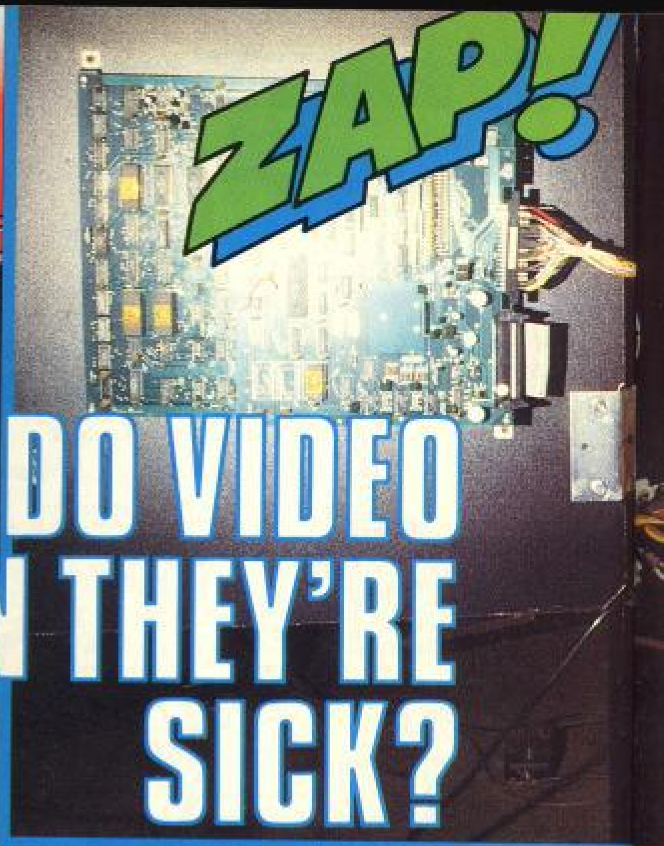
BIG K

ARCADE ALLEY

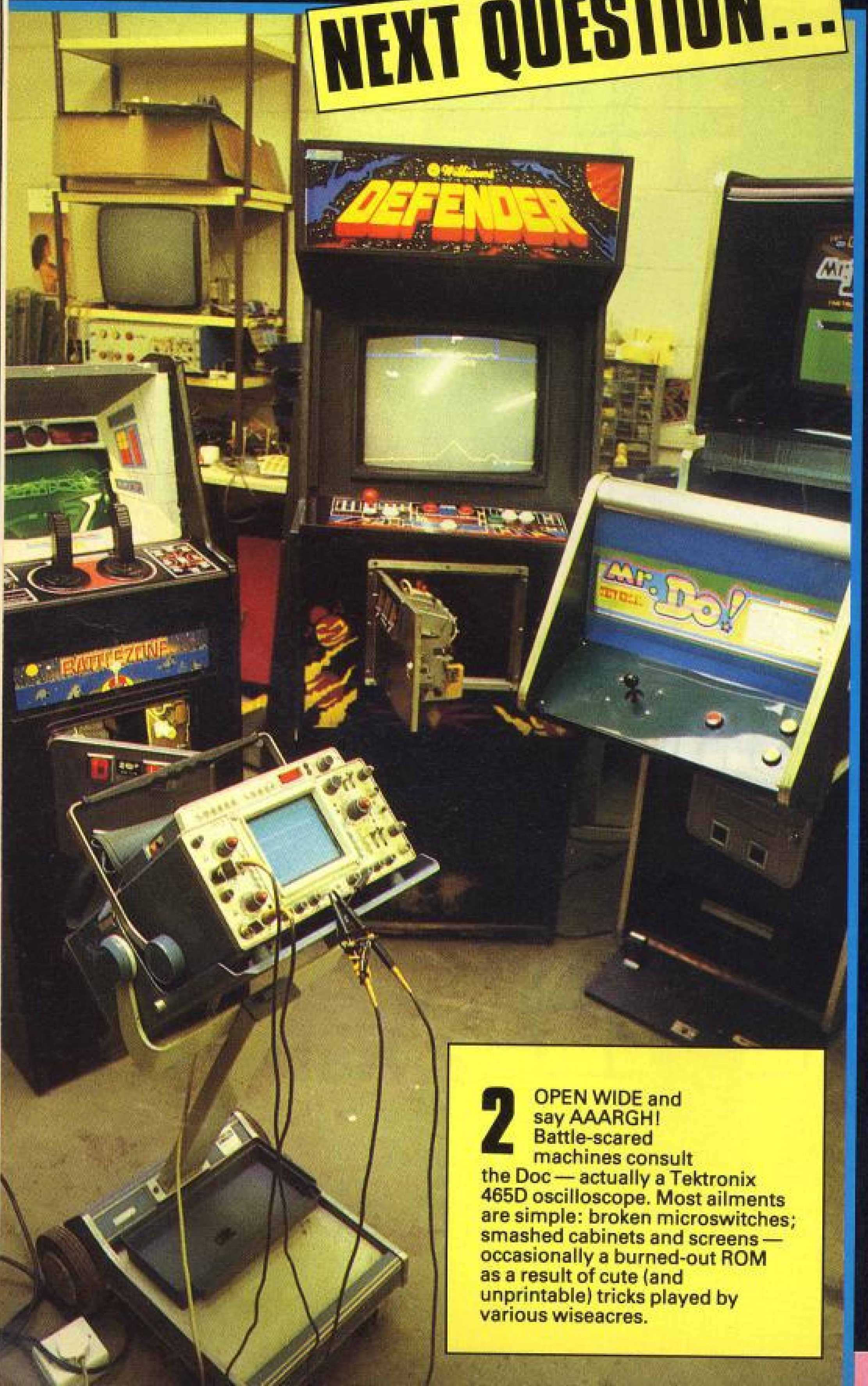
WHERE DO VIDEO GAMES GO WHEN THEY'RE SICK?

Answer: to the Doctor's

NEXT QUESTION...



3 The innards of TIME PILOT. Beneath the tube are the TV transistors and transformer. Left:



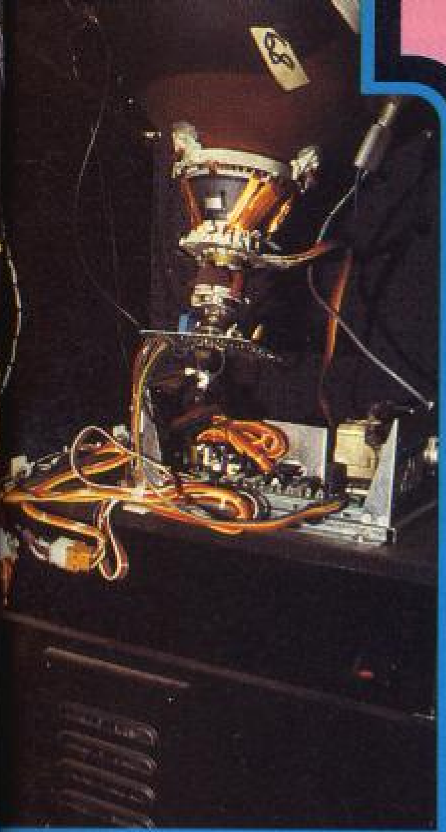
2 OPEN WIDE and say AAARGH! Battle-scared machines consult the Doc — actually a Tektronix 465D oscilloscope. Most ailments are simple: broken microswitches; smashed cabinets and screens — occasionally a burned-out ROM as a result of cute (and unprintable) tricks played by various wiseacres.



4 There was nothing actually wrong with this sturdy DEFENDER at all! In fact, it had merely come in for its regular three-month check-up, including a quick test of the colour balance. "And how are we feeling this time? Bombs still Smarting? Mutations progressing satisfactorily? Fine. Then if you'll just cough . . . Thank you. I think you're fit enough to go out there and take another three months' bashing at the hands of demented arcade freaks."

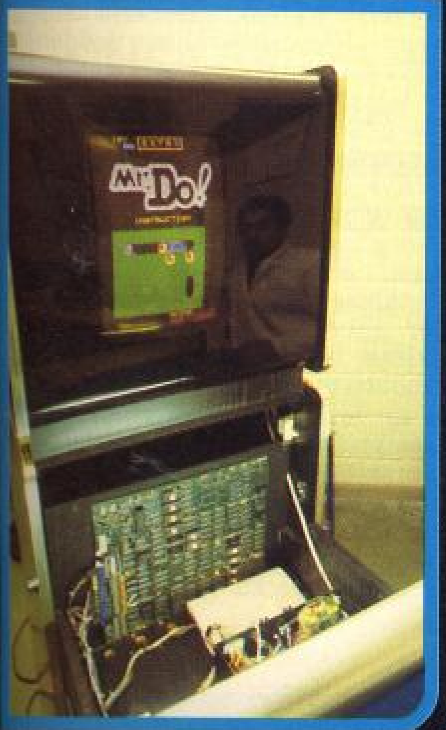


PILOT.
transis-



PCBs for sound and display. CPU? The good old Z80A — pressed into service in an upmarket capacity.

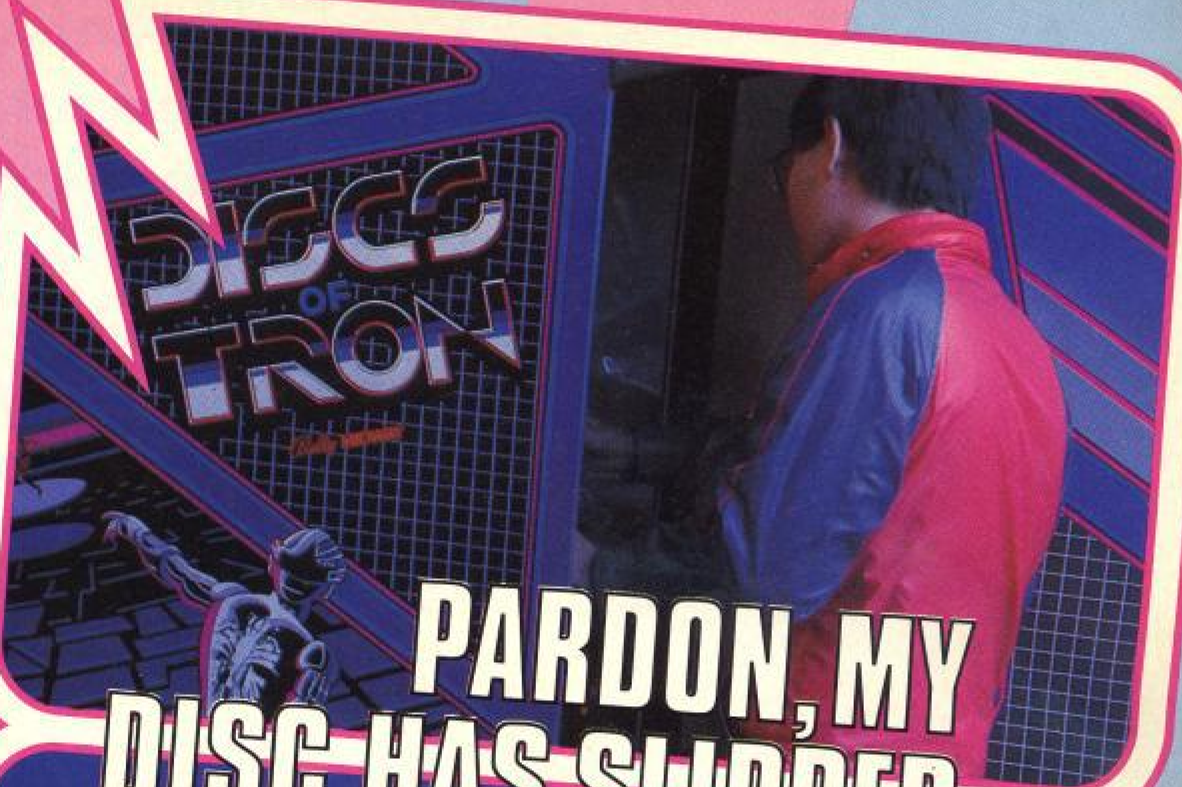




5 This BATTLE ZONE (above) had its joystick panel wrenched clean away by desperate manoeuvering. The MR DO (below) had a faulty power supply, now updated to switch-mode.



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PARDON, MY DISC HAS SLIPPED...

Disney's *Tron* was a supremely weird technoflick. Everybody was too busy gasping at the fact of megabuck computer animation to notice just how weird. But when was the last time you saw Ionian battlecruisers? And who would ever have imagined that the insides of a computer would look like a Trojan palace? The *Tron* game, like the film, was too weird, perhaps, to catch on with fans of the basic space-borne shoot-'em-up. And the neatest of the four game options — the laser bike — was over too quickly even when you had the knack.

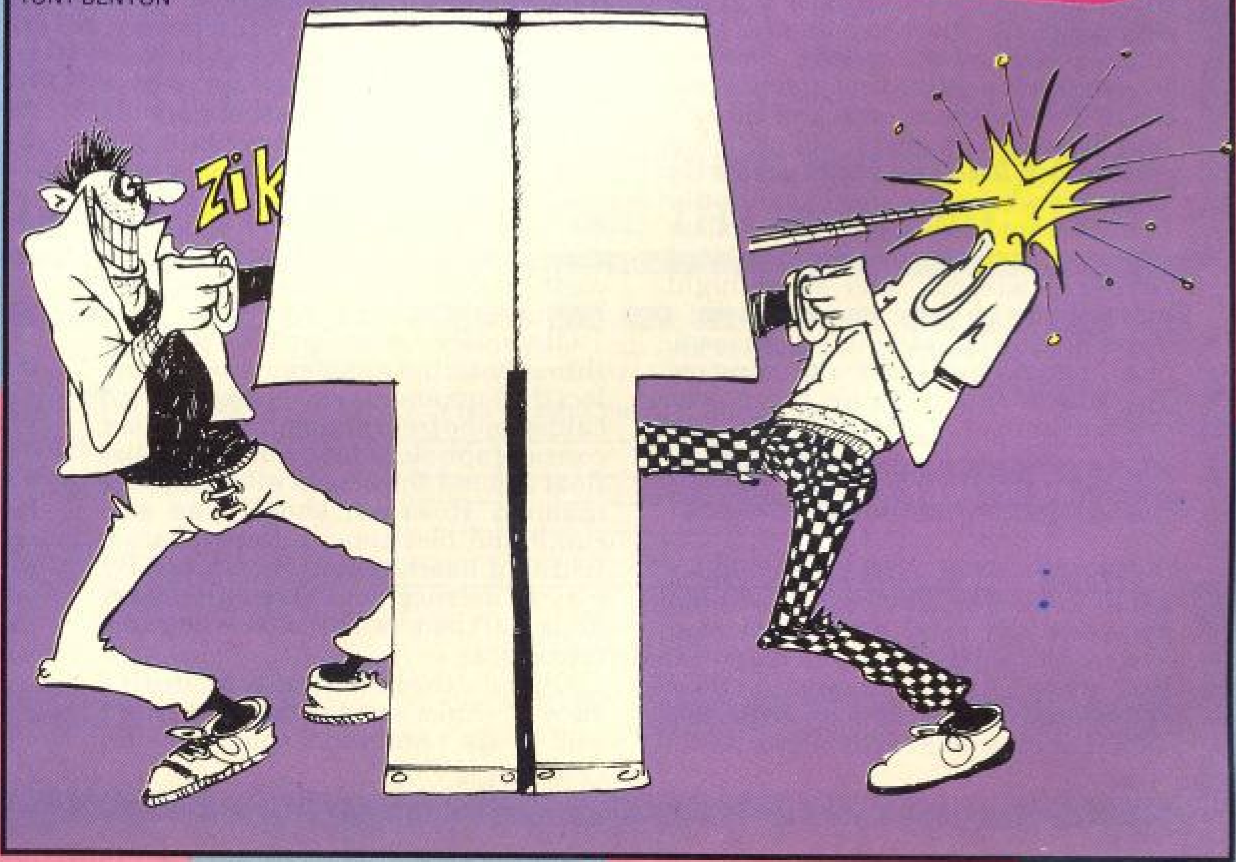
The new *Tron* game rectifies the diffuse appeal of the first with a single 360-degree game housed in a wrap-over console. Once inside this fantasy cabinet you're transported. *''You have been selected to serve on the games grid . . . ''* Those about to be thrashed salute you!

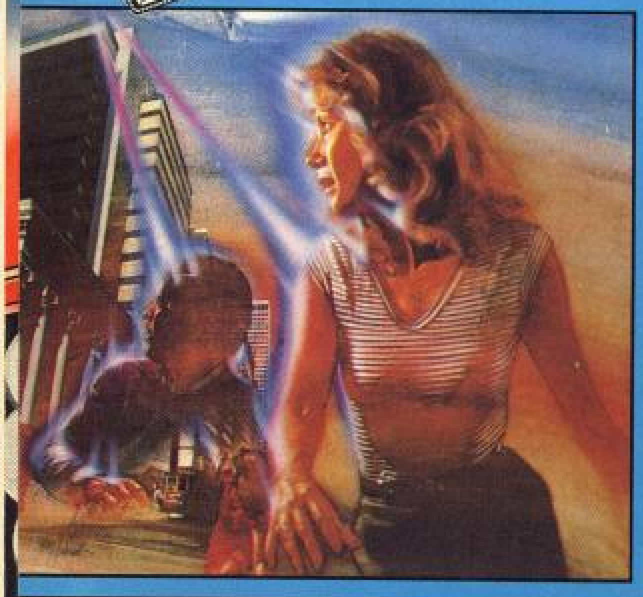
Your arena appears, a rectangle viewed from the same perspective as snooker tables on the TV, with your opponent poised on a hovering platform at the far end. You have to throw your three discs to knock him off, aiming with a marker that can be set at any point around the four walls, while dodging the discs he's throwing. At each stage, the number of platforms increases, and the game gets not so much faster as more mobile and more perilous.

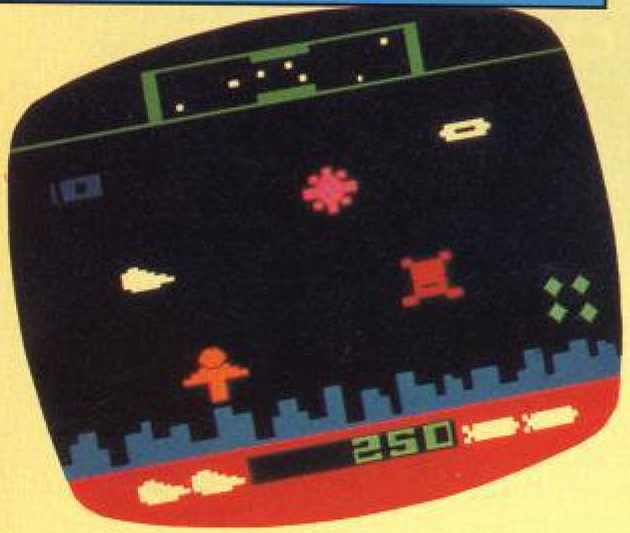
Ultimate 3D Game

The discs bounce like snooker balls from the walls and return to you on your platform. At stage five, the platforms begin to change height, making *Disc Of Tron* the ultimate 3D game. In other respects too, *Discs Of Tron* is different: the Mannerist colours and strange hieroglyphics of the upright console; the reflex speed of play, the futuristic Olympics of the game. It's weird but it's wonderful. Walt would turn in his fridge if he knew.

TONY BENYON







No.1 DEFENDER

DEFENDER IS THE quintessential Atari VCS cartridge. It has an appeal that's lifted it far above the faddish popularity of other games, and since its release remains pretty much unequalled as the ultimate 2600 challenge.

The cart is an adaptation of an arcade monster first unleashed by Williams Electronics, a company until then best known for its pinball machines. *Defender* strolled into the arcades during the Christmas of 1980 and revolutionised coin-op warfare overnight. It was the first game to bite back! The ferocious attack of Baiters and Swarmers made the old plodding menace of *Invaders* seem positively homely. Arcades had suddenly become grim-faced arenas of merciless gawping at those slick wristed *Defender* wizards who stood night after night happily enveloped in a dazzling display of pixels. I was jealous! I had no idea what was going on. The sheer speed of the thing was overwhelming.

Fearsome Nature

Defender is an extremely complex game to master. The cast is without exception the most malevolent ever assembled on a single video screen. But when Atari announced their acquisition of the title for the humble VCS, I fairly groaned at the prospect. I mean, there was NO WAY such a killer machine could be crammed into a cart. Was there?

Thankfully I was wrong. Not only did they cram it in, they produced a game with almost identical play to the original! Atari programmer Bob Polaro achieved a minor miracle by reducing 26 kilobytes of 5 button, 1 joystick mayhem into the heart of a *Pong*-sized cartridge. Indeed, *Defender* is — I guess — the single most successful conversion in the entire 2600 library. A bona-fide classic.

Armageddon

Earth is under attack. Hostile aliens, ironically attracted by a 'friendship' signal beamed by us into deep space, are descending in waves. Civilisation is being razed to the ground. It's like some George Pal movie come to life. Only you, in the cockpit of the Universal Space Ship *Defender* , remain as the last line of defence. Did I say defence? Wishful thinking. Those ominous blips on your scanner herald Armageddon. With a defiant sigh your ship accelerates across the horizon. It's time for action...

Defender's inherent challenge lies in its cast. The aliens come in six shapes: Bombers, Baiters, Landers, Mutants, Pods and Swarmers. Bombers are the quiet types and cause the least of problems. They tend to drift quietly down the screen and are quickly picked off. Baiters are just the opposite. Their undramatic appearance belies a fearsome nature. They'll hunt you dogmatically until either they wipe you or you wipe them. Their attack is both relentless and deadly. They also manage to distract you from the activities of the Landers, whose main aim is to kidnap the Humanoids who live in the city below. Once kidnapped a Humanoid will be transformed into a hideous mutant! Should the Landers abduct all 5 humanoids then you're in DEEP trouble, as the earth is destroyed in an apocalyptic mutant takeover.

Obviously your prime concern throughout the game must be to protect the humanoids and prevent such a catastrophe from happening. Pods are considerably less fearsome; they just float around the screen in a tempting manner. However, should you succumb and blast one it'll erupt into a fistful of heartseeking Swarmers! By way of defence you have only lasers and smart bombs. *Defender* is no game for cissies.

OK, now that you're fully briefed it's time to shake some action. Screens 1 and 2 are regulation shoot-'em-ups. The aliens have yet to pile on any pressure and neat flying will enable you to crank up a respectable score. Remember to kncok out the lone Bomber immediately as this eliminates any possibility of an accidental collision (very humiliating) and watch out for descending Landers. On the lower levels they move at an unhurried pace and so are easily shadowed. Let the Landers abduct the Humanoids and then — as they ascend the screen for home — blast 'em. You'll be able to catch the falling hume and claim 1,000 points per hit. Make the most of this strategy here, though, as it becomes impossible on later screens.

From screen three onwards *Defender* begins to play tough. Landers move about the screen with uncomfortable speed and the Baiters begin to get ratty. Me, I always begin by smart-bombing the two pods. It's possible to catch both with one hit and this saves the hassle of outflying Swarmers later on. Never — ever — skimp on the smart bombs. They're easily replaced and only foolish (or brilliant) pilots store them. Just let the suckers fly. As before, your main aim is to protect the Humanoids. As soon as you hear the garbled cry of a hume being kidnapped check out the scanner and move. Only, having shot the Lander and caught the hume, don't bother to put him down. As long as you've a Humanoid clinging to your belly the population will be safe. The other Landers won't try to kidnap anyone else.

Nerve-racking

A peal of VCS thunder heralds the Mutant takeover of Earth. This terrible event occurs the moment those filthy Landers succeed in abducting your entire population. The city is vaporised in a cheapo flash and swarms of crimson Mutants loom on the horizon. This is no time to panic as you'll need to survive 4 screens of Mutant Hell before Earth is restored (a miraculous occurrence, I'm sure you'll agree). The cart thoughtfully provides Mutant training missions which'll help you practise for this nerve-racking occurrence. Once again, work carefully with your scanner and keep on the move. Remember that a sudden change in direction will confuse the scraggy beasts and so allow you time to line up a healthy salvo of laser fire. And, of course, if things get too hot you can always hyperspace away. (The wimp's way out.)

And so goes it goes. The ultimate challenge. The appeal of Atari *Defender* clearly goes far beyond that of lesser shoot-'em-ups. In fact, the complexities of the onscreen action can so absorb the player that it almost becomes an intimate experience. Only try and express that excitement to those in the outside world and they'll think you're nuts. It's the first true classic of the video era. And the only cart guaranteed to make your feet sweat.

Play it in clean socks.

STEVE KEATON

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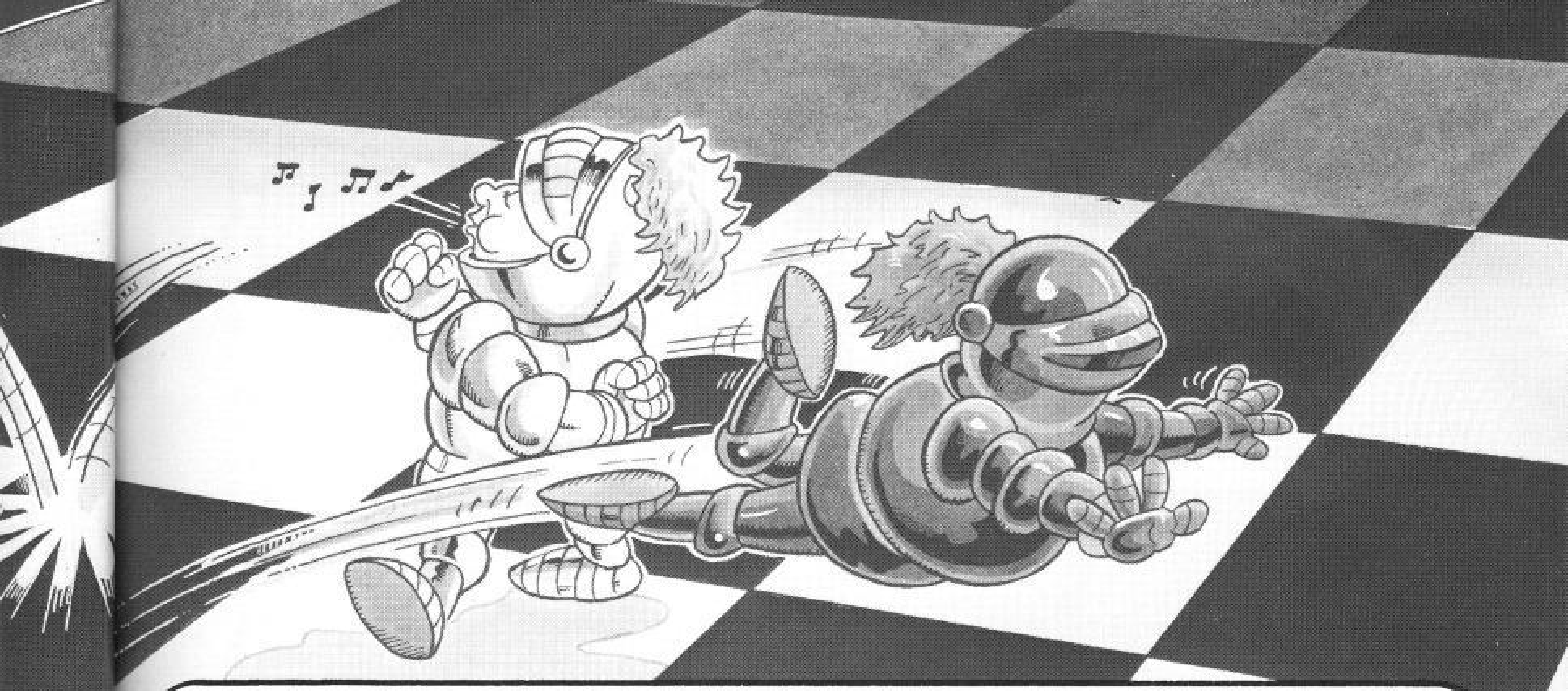
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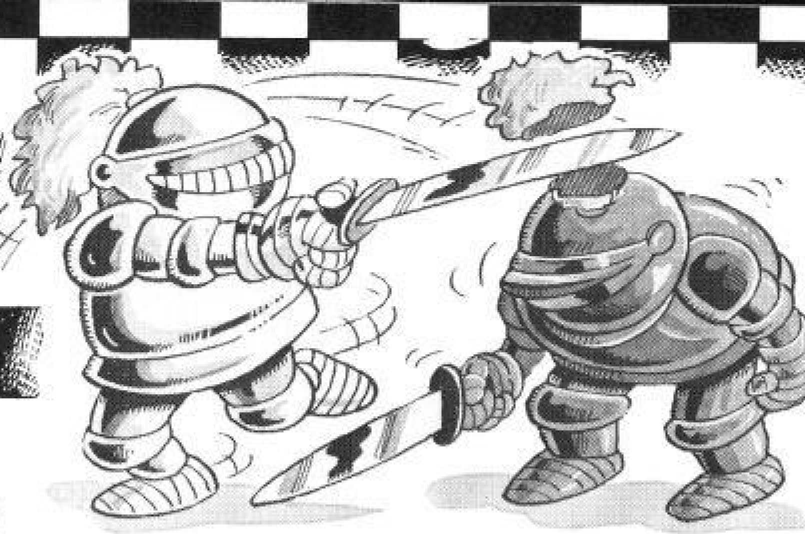
```
10 DIM A%(5),B%(5),C%(4,2),T%(9,9),
   U%(8,2),W(9,8),Z%(8,8)
20 GOSUB 2400:FOR I=1 TO 2000:NEXT
30 PRINT"[CLEAR,DOWN3]
   YOUR PIECES ARE DENOTED BY ''.
40 PRINT"[RIGHT3]THE COMPUTER'S" BY ''
   '.
50 PRINT"[DOWN]TO CONVERT A PIECE TO
   YOUR SYMBOL YOU
60 PRINT"[RIGHT3]MUST TRAP IT-HORIZON
   TALLY, VERTICALLY";
70 PRINT" OR DIAGONALLY - BETWEEN TWO
   'S.
80 PRINT"[DOWN]MOVES ARE ENTERED AS R
   OW, COLUMN - E.G.
90 PRINT"[RIGHT3]F 5, C 8 ETC..TO DEL
   ETE THE FIRST
100 PRINT"[RIGHT3]CHARACTER,
    PRESS THE 'DEL' KEY.
110 PRINT"[DOWN]THE WINNER IS THE ONE
    WITH THE LARGEST
120 PRINT"[RIGHT3]RESULTANT NUMBER OF
    PIECES.
130 PRINT"[DOWN]IF YOU CANNOT MOVE -
   TYPE 'O'."
140 PRINT"[DOWN]IF YOU CANNOT MOVE -
   TYPE 'O'.
150 PRINT"[RIGHT3]FOR PLAYING LEVEL -
    TYPE 'L'.
160 PRINT"[DOWN]STRIKE ANY KEY TO STA
   RT
170 GET A$:IF A$=""THEN 170
180 GOSUB 2400:PRINT"[DOWN3,RIGHT4]
   AT WHAT LEVEL OF COMPLEXITY DO YOU
   [DOWN]
190 PRINT SPC(9);"WISH TO PLAY (1,2,
   3) ?";
200 GET Y$:N=RND(1):IF Y$<"1"OR Y$>"3
   "THEN 200
210 C9=VAL(Y$):PRINT"[CLEAR]";
220 B$="ABBCDEFGOL"
230 W$="        "
240 X=0:Y=0:A=0:B=0:I=0:J=0:H=0:H1=0
  :W=0
250 K0=0:K1=1:K2=2:K8=8
260 X$=" ":V$="[HOME,DOWN,RIGHT5]"
270 DEF FN A(S)=INT(S*RND(1))+1
280 M3=0:C1=0:CC=-1:RESTORE
290 FOR I=1 TO 8:FOR J=1 TO 8
  :Z%(I,J)=2:READ W(I,J):T%(I,J)=0
  :NEXT:NEXT
300 Z%(4,4)=0:Z%(4,5)=1:Z%(5,4)=1
  :Z%(5,5)=0
310 K=1
```

Play the board game that's sweeping the civilised world without so much as a single counter to lose under the carpet. Just type in the listing below and RUN it. Please note— Commodore graphics have been translated into easy-to-under stand commands



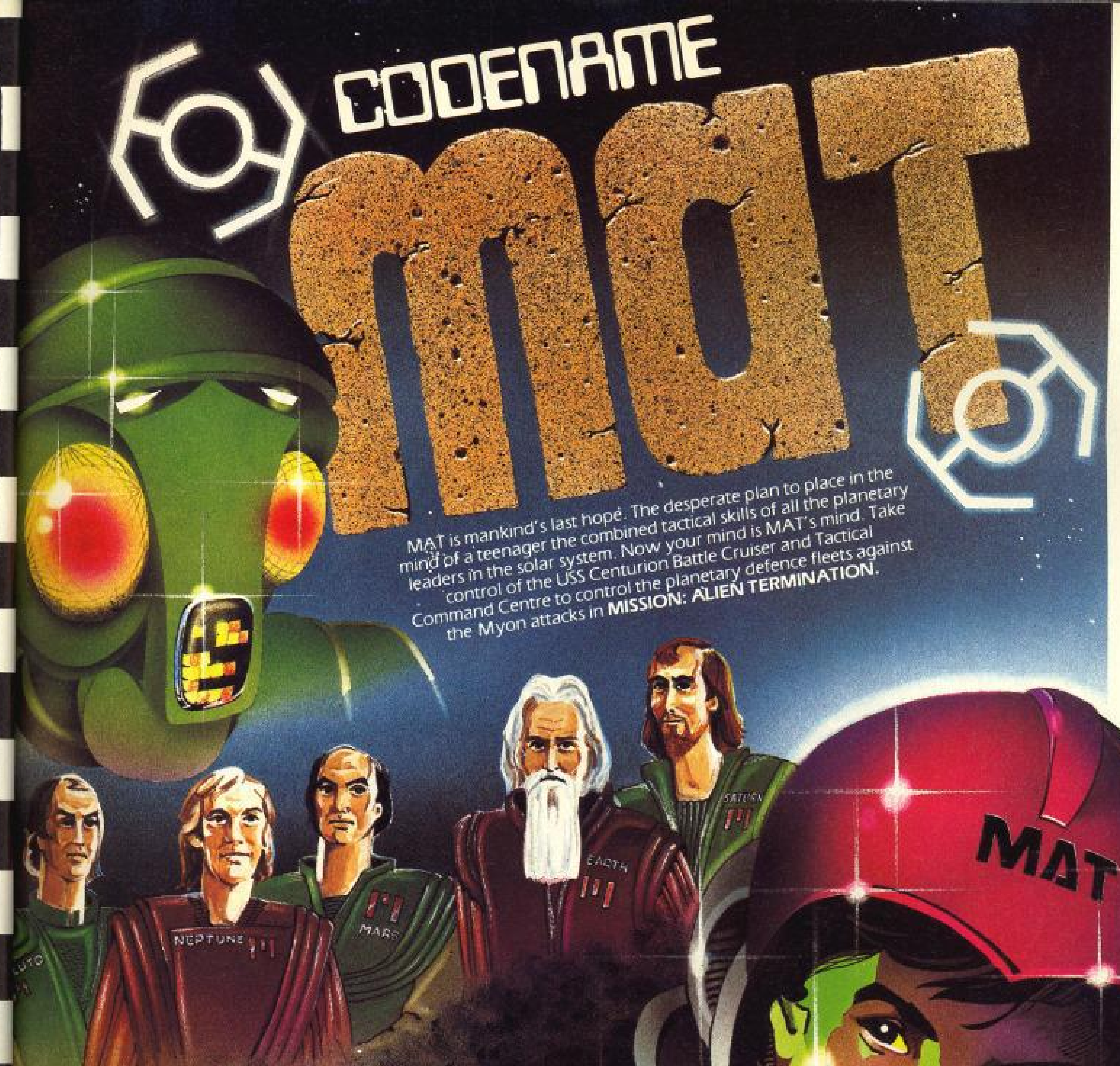
```
320 FOR I=-1 TO 1:FOR J=-1 TO 1
330 IF I=K0 THEN IF J=K0 THEN 350
340 U%(K,1)=I:U%(K,2)=J:K=K+1
350 NEXT:NEXT
360 DATA 1000,2.5,10,10,10,10,2.5,1000
370 DATA 2.5,.001,.11,.1,.1,.11,.001,
    2.5
380 DATA 10,.11,1.1,1,1,1.1,.11,10
390 DATA 10,.1,1,1,1,1,.1,10
400 DATA 10,.1,1,1,1,1,.1,10
410 DATA 10,.11,1.1,1,1,1.1,.11,10
420 DATA 2.5,.001,.11,.1,.1,.11,.001,
    2.5
430 DATA 1000,2.5,10,10,10,10,2.5,1000
440 FOR I=3 TO 6:FOR J=3 TO 6
    :T%(I,J)=K1:NEXT:NEXT
450 P=0:Q=1
460 GOSUB 910
470 PRINT V$;
480 IF FN A(2)=2 THEN 510
490 PRINT"MY MOVE FIRST"
500 M=2:GOTO 1610
510 PRINT"YOU HAVE THE FIRST MOVE
520 M=1:PRINT V$;"[DOWN22]YOUR MOVE ";
    W$;"[UP,RVS] [RVOFF,LEFT]";
530 GET A$:IF A$<"A"OR A$>"H"THEN IF
    A$<>"O"AND A$<>"L"THEN 530
540 PRINT A$;" ";:FOR I=1 TO 10
    :IF A$=MID$(B$,I,1)THEN A=I
550 NEXT:IF A=9 THEN 600
560 IF A=10 THEN PRINT"[HOME]";W$;W$;
    V$;"LEVEL";C9:GOTO 520
570 PRINT"[RVS] [RVOFF,LEFT]";:GET A$
    :IF A$>"0"AND A$<"9"THEN PRINT A$;
    :B=VAL(A$):GOTO 600
580 IF PEEK(515)=65 THEN 520
590 GOTO 570
600 PRINT"[HOME]";W$;W$;W$;
610 IF A<>9 THEN 650
620 M3=1:M4=1:C=Q:D=P:S=0:M=0:G=0
    :PRINT V$;"CHECKING":GOTO 1670
630 IF G=0 THEN M4=0:GOTO 1610
640 PRINT V$;"STOP CHEATING - YOU CAN
    MOVE":GOTO 520
650 IF Z%(A,B)=2 THEN 680
660 PRINT"[HOME,DOWN]THAT SQUARE IS O
   CCUPIED,PLEASE TRY AGAIN";
670 GOTO 520
680 C=Q:D=P:M3=0:M4=0:X9=86
690 H=K0:H1=K0:T=0
700 FOR E=K1 TO K8
710 M1=U%(E,K1):N1=U%(E,K2)
720 IF M<>K0 THEN T%(A+M1,B+N1)=K1
730 X=A:Y=B
740 X=X+M1:Y=Y+N1
750 IF X<K1 OR X>K8 OR Y<K1 OR Y>K8 T
   HEN 850
760 IF Z%(X,Y)=K2 THEN 850
770 IF Z%(X,Y)=D THEN 740
780 X=X-M1:Y=Y-N1
790 IF X=A AND Y=B THEN 850
800 H=H+K1:H1=H1+W(X,Y)
810 IF X=1 OR X=8 OR Y=1 OR Y=8 THEN
    T=1
820 IF M=K0 THEN 780
830 GOSUB 2370
840 Z%(X,Y)=C:GOTO 780
850 NEXT
860 IF M=0 THEN RETURN
870 IF H>0 THEN Z%(A,B)=C:X=A:Y=B
    :GOSUB 2370:GOTO 1120
880 PRINT V$;"[UP]THAT MOVE DOES NOT
   CAPTURE ANY";
890 PRINT" OF MY PIECES
900 GOTO 520
910 PRINT V$;"[DOWN2] 1   2   3   4
    5   6   7   8"
920 PRINT"[RIGHT4]";" ";
930 FOR E=1 TO 7:PRINT"    ";:NEXT
940 PRINT"    "
950 FOR I=1 TO 8
960 PRINT"  ";MID$(B$,I,1);
```


Continued on next page



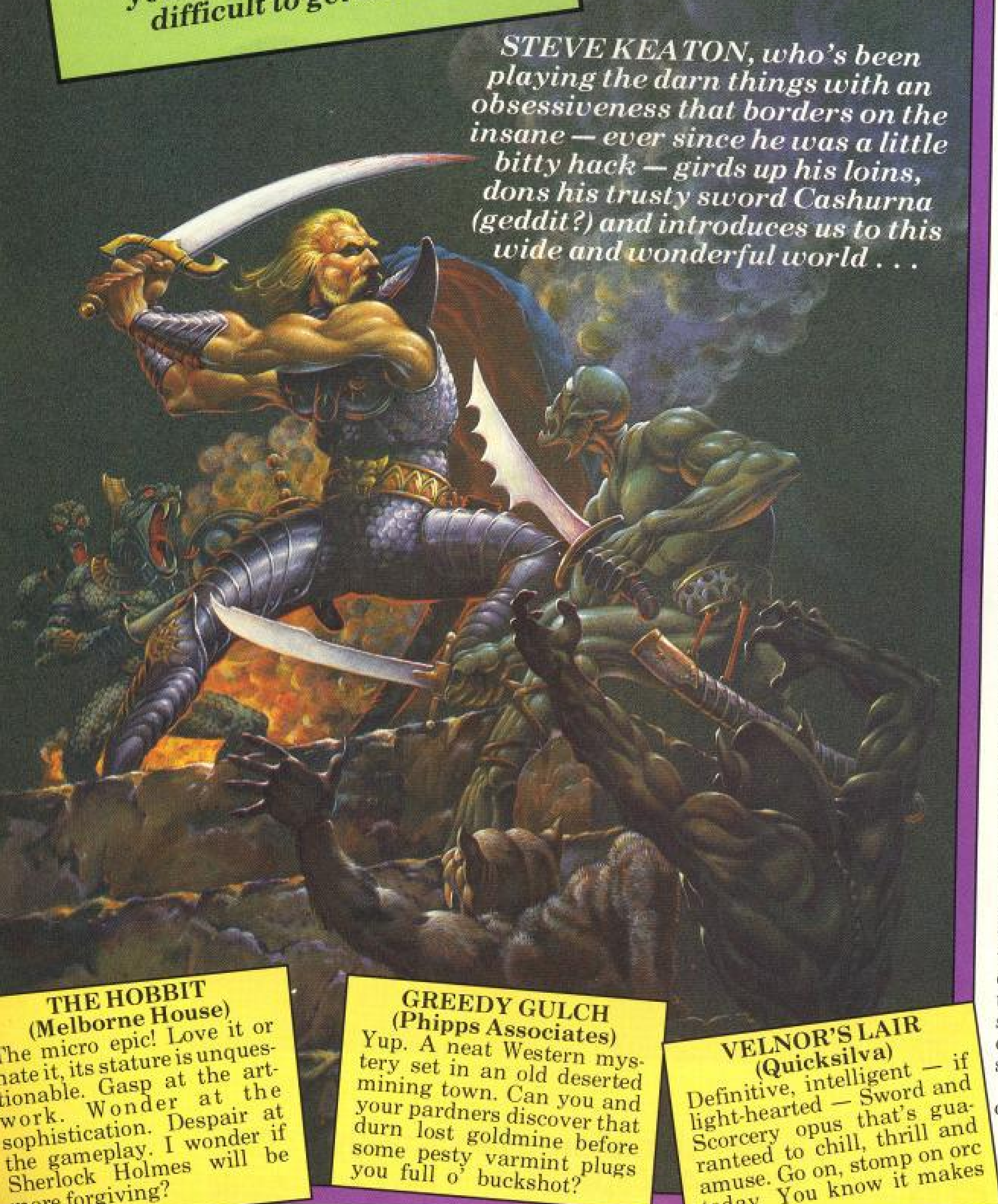
```
970 FOR J=1 TO 8
980 U=Z%(I,J)+K1
990 PRINT" ";MID$(X$,U,1);
1000 NEXT
1010 PRINT" ";MID$(B$,I,1)
1020 PRINT"[RIGHT4]";:IF I<>8 THEN PR
    INT"";
1030 Y$="    "
1040 IF I=8 THEN PRINT"";:Y$="    "
1050 FOR E=1 TO 7
1060 PRINT Y$;
1070 NEXT
1080 IF I<>8 THEN PRINT"    "
    :GOTO 1100
1090 PRINT"    "
1100 NEXT
1110 PRINT"[RIGHT5] 1   2   3   4   5
      6   7   8":RETURN
1120 C1=C1+K1
1130 IF C1=60 THEN 2060
1140 W9=W(A,B)
1150 IF W9>2 AND W9<999 AND M=2 THEN
    1490
1160 IF C9<3 THEN 1470
1170 IF W9>999 THEN CC=CC+1:C%(CC,1)=A
    :C%(CC,2)=B
1180 IF CC<0 THEN 1470
1190 FOR J=0 TO CC
1200 A=C%(J,1):B=C%(J,2):W=75
1210 IF A=1 AND B=1 THEN W(2,2)=W
1220 IF A=1 AND B=8 THEN W(2,7)=W
1230 IF A=8 AND B=1 THEN W(7,2)=W
1240 IF A=8 AND B=8 THEN W(7,7)=W
1250 W=.0001:IF Z%(A,B)=0 THEN W=100
1260 IF B+1>8 THEN 1370
1270 FOR I=B TO 6
1280 IF Z%(A,I)<>C THEN 1310
1290 W(A,I+K1)=W
1300 NEXT I
1310 IF A+1>8 THEN 1420
1320 FOR I=A TO 6
1330 IF Z%(I,B)<>C THEN 1460
1340 W(I+1,B)=W
1350 NEXT I
1360 GOTO 1460
1370 FOR I=B TO 3 STEP-1
1380 IF Z%(A,I)<>C THEN 1310
1390 W(A,I-1)=W
1400 NEXT I
1410 GOTO 1310
1420 FOR I=A TO 3 STEP-1
1430 IF Z%(I,B)<>C THEN 1460
1440 W(I-1,B)=W
1450 NEXT I
1460 NEXT J
1470 IF M<>2 THEN 1610
1480 GOTO 520
1490 W=.5:M1=K0:N1=K0:IF A=K1 THEN M1
    =K1
1500 IF A=K8 THEN M1=-1
1510 IF B=K1 THEN N1=1
1520 IF B=K8 THEN N1=-1
1530 IF A=K8 THEN M1=-1
1540 IF M1=0 AND N1=0 THEN 520
1550 IF A=2 OR A=7 OR B=2 OR B=7 THEN
    1580
1560 IF N1=0 AND C9=3 THEN I=A+M1
    :W(I,B)=W:W(I,B+1)=W:W(I,B-1)=W
1570 IF M1=0 AND C9=3 THEN I=B+N1
    :W(A,I)=W:W(A+1,I)=W:W(A-1,I)=W
1580 W=.001:W(2,2)=W:W(7,7)=W:W(2,7)=W
    :W(7,2)=W:W=.01:W1=.011
    :IF C9<2 THEN 520
1590 IF M1<>0 THEN 2250
1600 IF N1<>0 THEN 2310
1610 IF C9<3 THEN 1660
1620 W=.0005:IF Z%(K2,K2)=1 AND Z%(1,
    1)=2 THEN W(3,1)=W:W(2,1)=W
    :W(1,2)=W:W(1,3)=W
1630 IF Z%(7,2)=1 AND Z%(8,
    1)=2 THEN W(7,1)=W:W(6,1)=W
    :W(8,2)=W:W(8,3)=W
1640 IF Z%(7,7)=1 AND Z%(8,
    8)=2 THEN W(7,8)=W:W(6,8)=W
    :W(8,6)=W:W(8,7)=W
1650 IF Z%(2,7)=1 AND Z%(1,
    8)=2 THEN W(2,8)=W:W(3,8)=W
    :W(1,6)=W:W(1,7)=W
1660 X9=102:M=0:G=0:C=P:D=Q:S=0
    :PRINT V$;"MY MOVE ";
1670 FOR I=K1 TO K8
1680 FOR J=K1 TO K8
1690 IF T%(I,J)<>K1 THEN 1830
1700 IF Z%(I,J)<>K2 THEN 1830
1710 A=I:B=J
1720 GOSUB 690
1730 IF T=1 AND W(I,J)<999 THEN W(I,
    J)=500
1740 H1=H1*W(I,J)
1750 H=H*W(I,J)
1760 IF H1>H THEN H=H1
1770 IF H<G THEN 1830
1780 IF H=G THEN 1810
1790 A%(K1)=I:B%(K1)=J:K=K1:G=H
1800 GOTO 1830
1810 IF G=K0 THEN 1830
1820 K=K+K1:A%(K)=I:B%(K)=J
1830 NEXT:NEXT
1840 IF M4=1 THEN 630
1850 M2=K0
1860 IF G>K0 THEN 1910
1870 M2=1
1880 PRINT V$;"I CANNOT GO"
1890 IF M3=1 THEN 2060
1900 GOTO 520
1910 I=FN A(K)
1920 A=A%(I):B=B%(I):S=K1:GOSUB 690
1930 IF C9<2 THEN 2040
1940 IF W(A,B)<2 OR W(A,
    B)>90 OR H1>=10 THEN 2040
1950 IF A=1 OR A=8 THEN 1980
1960 IF Z%(A+1,B)=Q OR Z%(A-1,
    B)=Q THEN 2000
1970 GOTO 2040
1980 IF Z%(A,B+1)=Q OR Z%(A,
    B-1)=Q THEN 2000
1990 GOTO 2040
2000 IF W(A,B)=2.5 THEN W(A,B)=.001
    :GOTO 2020
2010 W(A,B)=.02
2020 IF K=1 THEN 1660
2030 A%(I)=A%(K):B%(I)=B%(K):K=K-1
    :GOTO 1910
2040 PRINT"IS ";MID$(B$,A,1);B
2050 M=2:GOTO 690
```

Continued on page 54

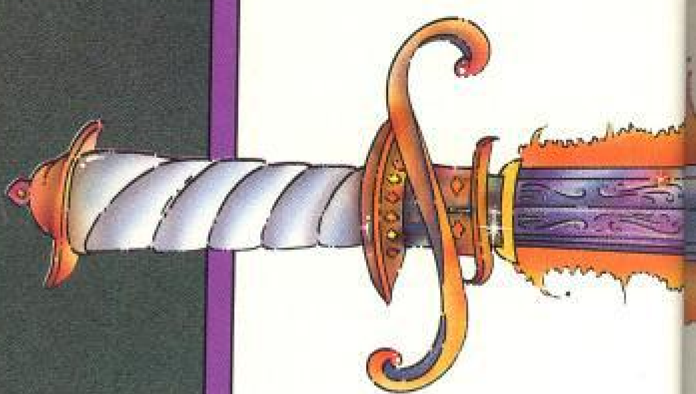

CODENAME
MAT
MAT is mankind's last hope. The desperate plan to place in the mind of a teenager the combined tactical skills of all the planetary leaders in the solar system. Now your mind is MAT's mind. Take control of the USS Centurion Battle Cruiser and Tactical Command Centre to control the planetary defence fleets against the Myon attacks in **MISSION: ALIEN TERMINATION.**
NEPTUNE
MARS
EARTH
SATURN
MAT

ADVENTURE

It all began way-back-when with two cats name of Crowther and Woods. They were skiving from the Stanford University, California, who employed them, and while dallying with a monster mainframe one day, they got tapping . . . The result was a 300K interactive storyline called Colossal Cave, and within weeks it became a bootleg hit. Since then it's growed and growed, and today Adventure is the fastest-developing form of computer fantasy. You can be who you want, where you want and when you want. But you'll find it difficult to get out alive.



STEVE KEATON, who's been playing the darn things with an obsessiveness that borders on the insane — ever since he was a little bitty hack — girds up his loins, dons his trusty sword Cashurna (geddit?) and introduces us to this wide and wonderful world . . .



THE DREADED mind-bender can take many forms: It could be an uncrossable chasm or an indefatigable Dragon; an unpassable giant or even an irate Black Pudding. It could be any one of many diabolical developments that forces you to grasp your hair and groan in despair. Perhaps you're incarcerated in some ghastly Goblin's dungeon and can't get out? If so then join the club. The Adventurer's Club. The cult of the

COMPUTER ADVENTURE

confused and slightly insane.

Its members are easily identified. They've withered from late night explotation, and have a disconcerting habit of breaking off conversations and declaring something inane like: "The cheese! I can divert its attention with the cheese!" for no apparent reason. They're a curious band. And rather disturbingly . . . they're growing!

The adventure is fast becoming an essential ingredient in the microgamester's diet. More substantial than the average arcade test, it'll tax and infuriate you, challenging your imagination like few things have ever done before. And, as you might imagine, it could well drive you nuts.

Needing several weeks to digest, a full-blown adventure will transport a player to an alternate reality where only lateral thought and a trusty blade will guarantee survival. It's a whole different ball game from Invader slaying.

Convention would almost certainly set an adventure

THE HOBBIT (Melborne House)
The micro epic! Love it or hate it, its stature is unquestionable. Gasp at the artwork. Wonder at the sophistication. Despair at the gameplay. I wonder if Sherlock Holmes will be more forgiving?

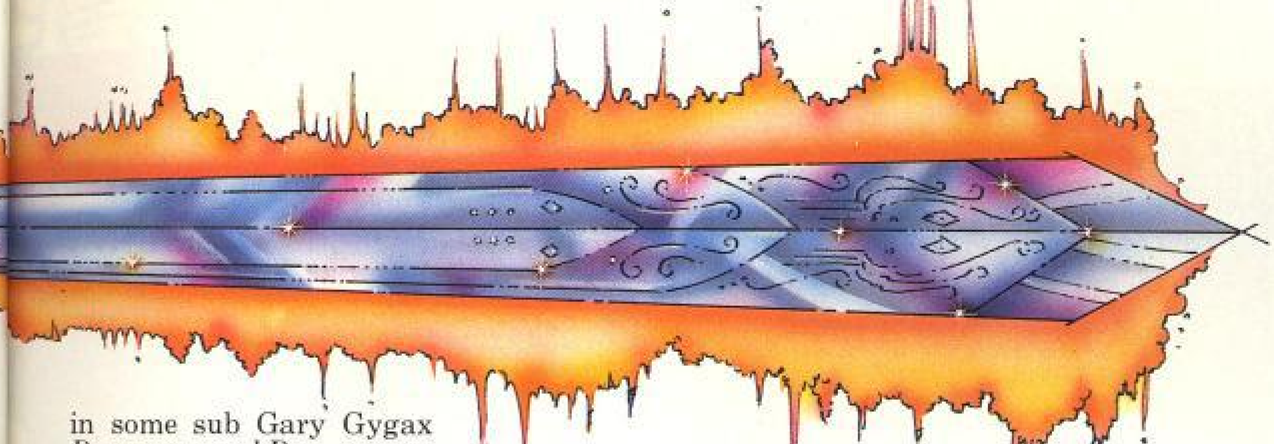
GREEDY GULCH (Phipps Associates)
Yup. A neat Western mystery set in an old deserted mining town. Can you and your pardners discover that durn lost goldmine before some pesty varmint plugs you full o' buckshot?

VELNOR'S LAIR (Quicksilva)
Definitive, intelligent — if light-hearted — Sword and Scorcery opus that's guaranteed to chill, thrill and amuse. Go on, stomp on orc today. You know it makes sense.

MISSION 1: PROJECT VOLCANO (Mission software)
Superior secret agent saga that pitches you against the nuclear might of the Soviet Bloc. Piece of cake, eh comrades?

ADVENTU

ADVENTURE



in some sub Gary Gygax *Dungeons and Dragons* scenario, peopled with orcs and other 'orrors; however, a great variety of locale is available. There's nothing to stop you loading up an adventure in the Wild West, or on a hostile alien world or even one within the confines of Number Ten. The choice is both bizarre and huge. Newcomers to the club are quite likely to feel swamped by choice.

One's first adventure is always a memorable experience. The thrill of the quest

THE LAST FRONTIER

setting the scene for your subsequent mental collapse. It's most important not to get lumbered with a duffer on your first outing, it could scar you for life. A personal favourite of mine is VELNOR'S LAIR (which runs on a 48K Spectrum from Quicksilva). It's a classically styled text adventure that pits you against Zombies, Orcs, Goblins and sundry in a chilling search for the Black Wizard Velnor.

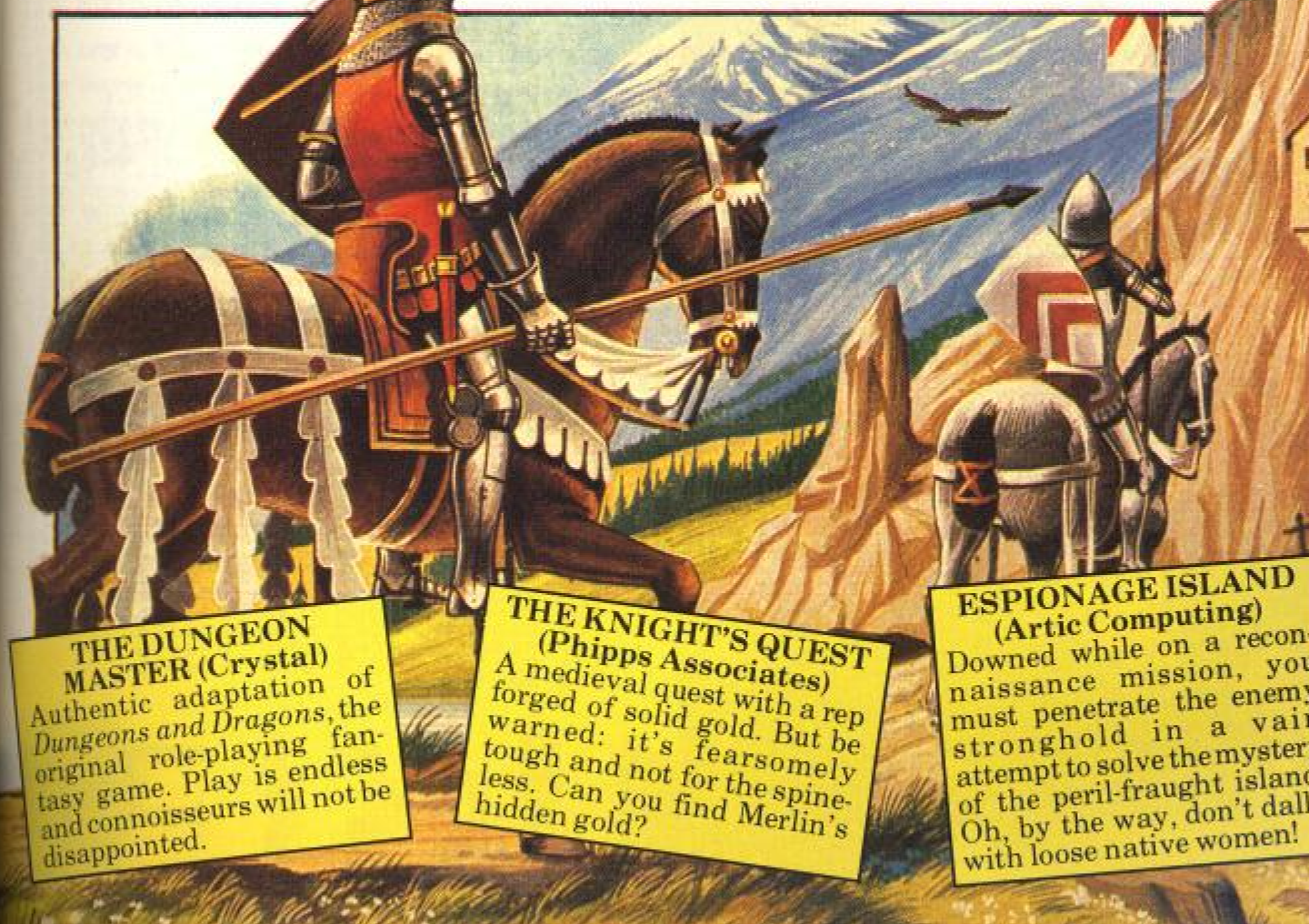
It seems the old goat has taken refuge within the Goblin Labyrinth of Mount Elk and is about to realise his one great ambition, to become a true demon on Earth. Naturally this causes much consternation amongst decent thinking folks. Only you can thwart his plan and save mankind! It's a marvellous Sword and Sorcery romp with a wry sense of humour.

The game allows you the choice of a character. You can play a priest or a wizard — both of which have spells at their command — or a brawny barbarian, who, while being shortchanged in the smarts department, can slug it out with the best of 'em. Naturally wishing to emulate my own physical prowess and stature I played the game as the latter. The adventure is wonderfully scripted and delightfully friendly, which makes it an ideal initiation for the newcomer. And while not being exceptionally difficult it does possess a number of those infuriating mindbenders. The toughest of which is without doubt the crocodile infested river. It's giving nothing away to say that the log-like fiends have got to be fed in order for you to pass. But with what? I spent bloody ages puzzling over it.

Having found both apples and flour I concluded that the only solution was to bake the ravenous reptiles an apple pie! Needless to say this was way off beam. Their culinary bent was of a far

Continued on page 54





GOLDEN APPLE (Arctic Computing)
Travel through a brace of unrelated scenarios in this bizarrely scripted search for a mystical golden apple. Starts easy — gets tough.

MAGIC MOUNTAIN (Phipps Associates)
Dare you venture within the bug-encrusted confines of a treasure trove mountain? I thought as much. You guys are so predictable!

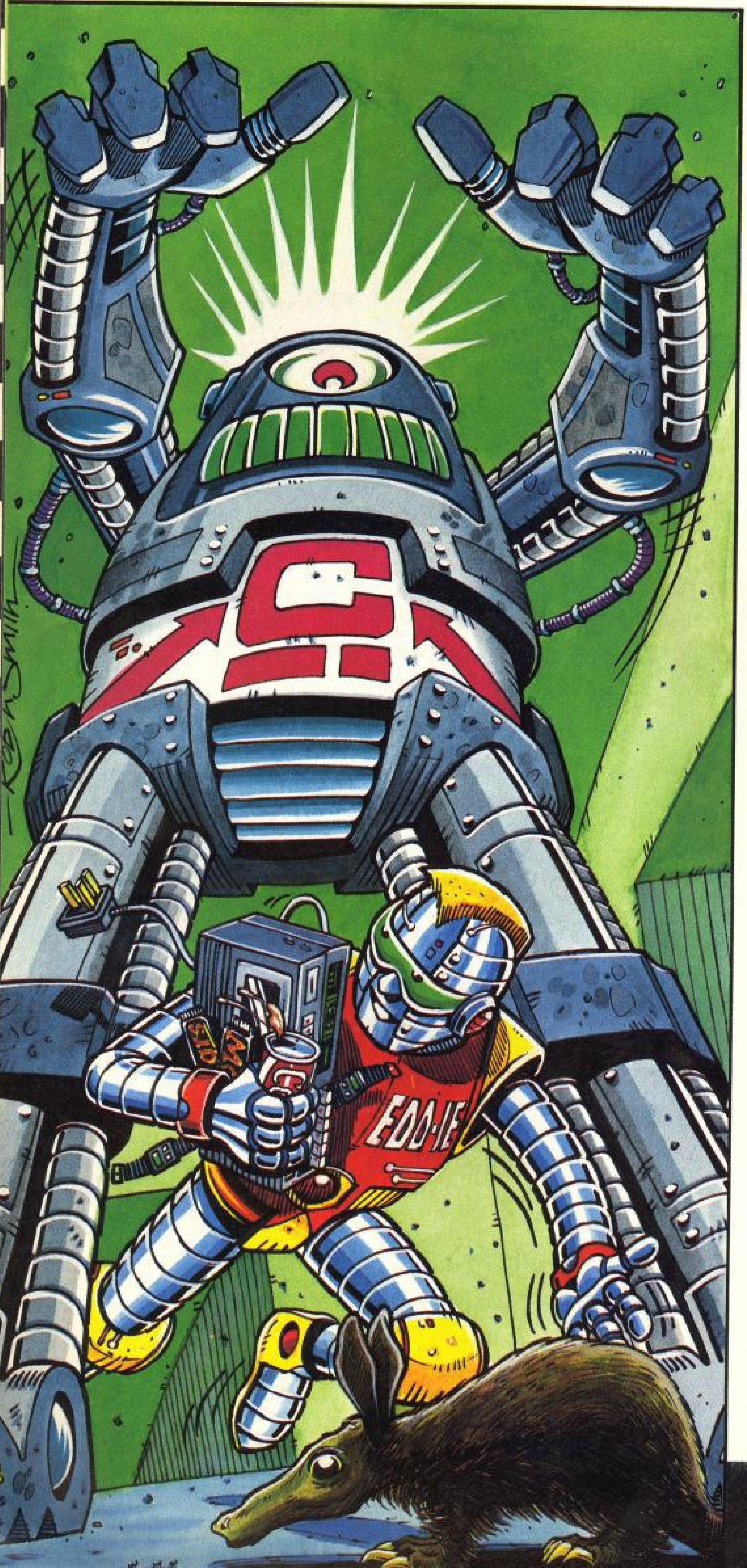
THE DUNGEON MASTER (Crystal)
Authentic adaptation of *Dungeons and Dragons*, the original role-playing fantasy game. Play is endless and connoisseurs will not be disappointed.

THE KNIGHT'S QUEST (Phipps Associates)
A medieval quest with a rep forged of solid gold. But be warned: it's fearsomely tough and not for the spineless. Can you find Merlin's hidden gold?

ESPIONAGE ISLAND (Artic Computing)
Downed while on a reconnaissance mission, you must penetrate the enemy stronghold in a vain attempt to solve the mystery of the peril-fraught island. Oh, by the way, don't dally with loose native women!

MCKENSIE (Software projects)
Entertaining SF escape adventure that has you abandoned onboard a decrepit space station; and as you might expect, there's only limited oxygen to be had. Beam me up Scotty!

ADVENTURE



Returning to Earth from Alpha Centauri, your teleport beam is interrupted by a weird glitch and you find yourself stranded in an eerie, apparently deserted alien city. As you begin to investigate your surroundings you encounter a friendly android by name of Eddie. With his help you begin to explore a maze of rooms, encountering oddly familiar objects and diabolical dangers at every turn. Will you ever find a way to leave this alien world? Or will you be stranded forever in an endless labyrinth — where perhaps you are not alone . . .?

```
   1 REM alien city adventure
   2 REM Steve Craddock
   3 REM © SCEIRON 1984
   4 REM check spaces when enter
ing any text and also for "'"
   9 REM locations
  10 DIM a$(13,8): FOR a=1 TO 13
: READ a$(a): NEXT a
  20 DATA "sinister","smallish",
"big,blue","low,dark","freezing"
,"torchlit","spacious","wet,dank
","greenish","red-hued","cavelik
e","standby","teleport"
  29 REM directions
  30 DIM b$(7,5): FOR a=1 TO 7:
READ b$(a): NEXT a
  40 DATA "out","up","down","wes
t","east","north","south"
  49 REM objects
  50 DIM c$(21,13): FOR a=1 TO 2
1: READ c$(a): NEXT a
  60 DATA "guard","cyclops","sig
n","transmat","bag of canvas","t
icket","goblin","video unit","di
gital watch","aardvark","can of
coke"
  70 DATA "mars bar","space manu
al","ring of gold","key of bronz
e","pile of bones","broken video
","wrecked watch","heap of bones
","empty can","sweet wrapper"
  79 REM descriptions
  80 DIM d$(15,32): FOR a=1 TO 1
5: READ d$(a): NEXT a
  90 DATA "a dark tunnel, stretc
hing away.","a pass between high
 rocky crags.","a dusty trail,le
ading to a bend.","thick dust,un
disturbed for years","footprints
. Someone's been here!","stalagt
ites & snow. It's chilly!"
 100 DATA "a sign: 'BEWARE OF TH
E CYCLOPS!'","a narrow path over
 a sheer drop.","an unused area,
thick in cobwebs.","an eerie glo
w from the next room","a message
: 'KILROY WAS HERE!'","an armed
guard at the exit."
 105 DATA "a transmat device ope
rating here","some rickety-looki
ng stairs here","a mean-looking
cyclops here."
 109 REM je ne comprends pas
 110 DIM e$(6,32): FOR a=1 TO 6:
 READ e$(a): NEXT a
 120 DATA "I beg your pardon?","
What ARE you talking about?","I
don't understand what you mean",
"What? Sorry, I don't know that.
","I can't make any sense of thi
s!","Want to try that again?"
 129 REM set up colours
 130 DIM p(13): FOR a=1 TO 13: R
EAD p(a): NEXT a
 135 DATA 0,1,5,0,5,0,6,1,4,3,0,
6,2
 140 DIM i(13): FOR a=1 TO 13: R
EAD i(a): NEXT a
 145 DATA 7,7,1,4,1,3,0,5,0,6,5,
3,6
 149 REM verbs
 150 DIM v$(23,3): FOR a=1 TO 23
: READ v$(a): NEXT a
 160 DATA "get","go ","loo","inv
","put","dro","des","dri","exa",
"ent","hel","ope","run","eat","b
ac","tal","qui","fig","kil","att
","rea","giv","wea"
 169 REM cyclops graphic
 170 FOR a=0 TO 7
 171 READ b: POKE USR "a"+a,b
 172 READ b: POKE USR "b"+a,b
 173 READ b: POKE USR "c"+a,b
 174 READ b: POKE USR "d"+a,b
 175 READ b: POKE USR "e"+a,b
 176 READ b: POKE USR "f"+a,b
 177 READ b: POKE USR "g"+a,b
 178 READ b: POKE USR "h"+a,b
 179 NEXT a
```

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ADVENTURE

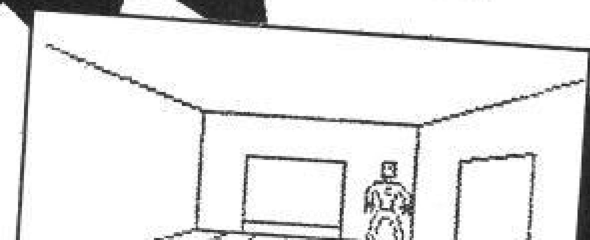
TRIED & TESTED BIG K GAMES

ADVENTURE X

for SPECTRUM in 48K

by Steve Craddock

Xtra Long Xtra good! Take Xtra care typing it in! We suggest you arm yourself with plenty of coffee — and don't try to get it all in one go. SAVE at frequent intervals as you go along.



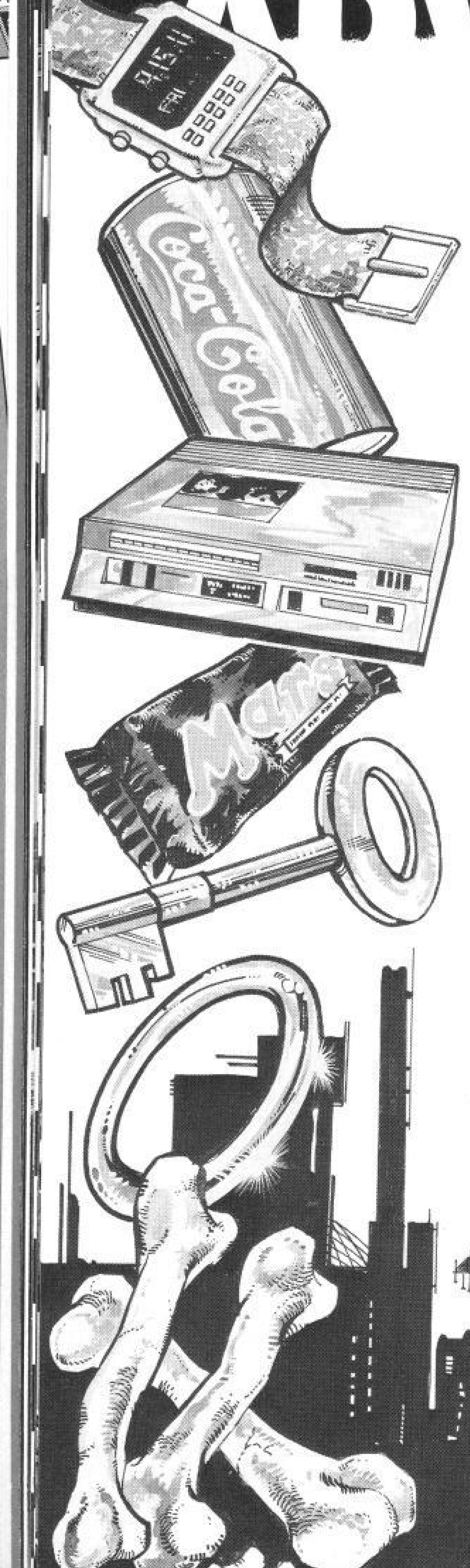
This superb adventure has a randomised structure that gives you a different game each time you play. It also means you can collect almost as many items as you can find, in an infinite number of rooms. Needless to say, some may be of more use than others.

The game includes a replay option, instructions, on-screen score and hi-score, plus a graphic visual of your current location. The vocabulary is reasonably comprehensive for the size of the program and a variety of responses are catered for. So investigate while you explore — and if you get desperate, try typing HELP.

```
 180 DATA 7,192,32,8,167,199,72,36
 181 DATA 4,64,65,132,168,37,80,20
 182 DATA 5,64,146,18,16,16,80,20
 183 DATA 4,64,169,169,19,144,80,20
 184 DATA 4,64,40,37,36,72,80,20
 185 DATA 7,192,164,69,36,72,112,28
 186 DATA 2,128,228,71,40,40,144,18
 187 DATA 31,240,244,79,40,40,240,30
 189 REM set up arrays etc
 190 DIM i$(30): POKE 23609,40: LET hisco=0: DEF FN z(z)=INT (RND*z)+1
 199 REM introduction
 200 BORDER 1: PAPER 1: CLS : INK 5: PRINT INK 7;"      WELCOME TO ALIEN CITY": PAUSE 50
 210 PRINT '"INSTRUCTIONS": PAUSE 50: PRINT "We're lost in a series of rooms and must find a way to escape.  Give me instructions and I'll domy best to help, but be as brief"
 220 PRINT "as possible (mostly, one or two word orders). I found some itemslying around you may want to     collect.Some look more valuable"
 230 PRINT "than others. I also found that  going back the way I came won't normally return me to the room Iexpected.It's an endless warren."
 240 PAUSE 150: PRINT "SCORING": PAUSE 50: PRINT "Notice how the score changes as you investigate.HISCORE is total"
 250 PRINT "score divided by total moves, sobuild the score up as quickly aspossible for maximum HISCORE."
 260 PAUSE 200: PRINT INK 6;"I'm Eddie. Who are you?"
 270 INPUT LINE p$: IF LEN p$>10 THEN PRINT INK 6;AT 21,0;"No more than 10 letters please": GO TO 270
 275 IF p$="" THEN LET p$="Sunshine"
 280 PRINT INK 6;AT 21,0;"OK, ";p$;", let's go!          ": PAUSE 50
 289 REM initial values
 290 LET h=0: LET sco=0: LET m=0: LET w=0: LET r=0: LET f=0: LET s=1
 295 DIM h(24): LET cm=FN z(30)
 299 REM location set up
 300 LET z=FN z(12): IF z=12 AND sco<200 THEN GO TO 300
 310 IF z=w THEN LET r=1: GO TO 400
 315 LET s=1-s*(z<12)
 320 DIM f(4): DIM d(7): DIM b(2): LET w=z: IF f>30 THEN LET f(4)=1
 330 IF m=cm THEN LET f(3)=1
 340 FOR y=1 TO 3: LET d(FN z(5)+1)=1
 350 IF s THEN LET d(2)=0: LET d(3)=0: LET d(6)=1
 360 NEXT y: IF w>11 THEN LET d(1)=1
 365 IF d(2) OR d(3) THEN LET f(1)=1
 370 LET f(2)=0+12*(w=12)+13*(w=13)+14*(f(1)-f(3))+15*f(3): LET f(2)=f(2)-w*(f(2)>15): IF f(2) THEN GO TO 390
 380 LET f(2)=FN z(11)
 390 LET b(1)=FN z(15): IF b(1)<5 THEN LET b(1)=0
 400 GO SUB 4000: PAPER 7: INK 0
 410 IF r THEN PRINT AT 11,0;"Still in the ";a$(w);" room, with": GO TO 430
 420 PRINT AT 11,0;"I'm in a ";a$(w);" room. There's"
 430 PRINT d$(f(2)): LET g=0+1*d(1)
 440 PRINT "Exits are": LET c=10: FOR y=1 TO 7: IF d(y)=0 THEN GO TO 460
 445 PRINT AT 13,c;b$(y)
 450 LET c=c+5*(y=1)+4*(y=2)+6*(y>2 AND y<6)+7*(y>5): IF c>10 THEN PRINT AT 13,c-2;",": LET c=c-9
 460 NEXT y: PRINT "Looking around me I can see"
 470 LET l=15: IF b(1)=0 AND b(2)=0 THEN PRINT AT l,0;"    nothing else       "
 475 FOR x=1 TO 2: IF b(x)=0 THEN GO TO 510
 480 LET b=0: LET y=b(x): GO SUB 680
 485 IF b THEN PRINT AT l,2;"another ";c$(y): GO TO 505
 490 IF y=10 OR y=20 THEN PRINT AT l,4;"an ";c$(y): GO TO 505
 500 PRINT AT l,4;"a ";c$(y)
 505 LET l=l+1: PRINT TAB 22;" "
 510 NEXT x: GO TO 530
 520 PRINT "What's next then, ";p$;"?"
 530 PRINT AT 18,0;"What shall I do now, ";p$;"?": BEEP .03,20 : LET f=f+1
 539 REM input routine
 540 INPUT LINE i$: LET b=0: LET n=0
 550 FOR l=19 TO 21: PRINT AT l,0;TAB 31;" ": NEXT l
 560 PRINT INK 2;AT 19,0;"> ";i$
 570 IF i$(2 TO 3)="  " THEN GO TO 600
 575 IF f(3) THEN LET f(3)=f(3)+1: IF f(3)>3 THEN GO TO 2420
 580 FOR x=1 TO 23: IF i$( TO 3)=v$(x) THEN GO TO 900+x*100
 585 NEXT x: IF i$( TO 5)="eddie" THEN GO TO 2560
 590 PRINT e$(FN z(6)): GO TO 520
 600 IF i$(1)="i" THEN GO TO 1300
 610 FOR y=1 TO 7: IF i$(1)=b$(y,1) THEN LET n$=b$(y): GO TO 1140
 620 NEXT y: GO TO 1280
 629 REM object trap
 630 FOR e=d TO 20
 640 IF i$(e)=" " THEN LET n$=i$(d TO e-1): GO TO 660
 650 NEXT e
 659 REM object verification
 660 FOR y=1 TO 21: IF n$=c$(y, TO (e-d)) THEN GO TO 670
 665 NEXT y: LET n=1: RETURN
 670 IF x=1 THEN LET b=1: RETURN
 679 REM object held?
 680 FOR o=1 TO 24: IF h(o)=y THEN LET b=1: RETURN
 690 NEXT o: RETURN
 999 REM get
1000 LET d=5: GO SUB 630: IF b THEN GO TO 1020
1010 IF y=22 THEN GO TO 1280
1020 IF y<5 THEN PRINT "Don't be silly!": GO TO 520
1030 IF f(4) OR h>20 THEN PRINT "I'm worn out.I must rest a while": PAUSE 40: GO TO 1050
1040 GO TO 1060
1050 LET c=0: FOR o=1 TO 27: PRINT AT 20,c;"z": LET c=c+1: PAUSE 10: NEXT o: PRINT AT 20,c;" ": PAUSE 100
1060 FOR x=1 TO 3: IF b(x)=y THEN GO TO 1080
1070 NEXT x: PRINT AT 20,0;"I don't see a ";c$(y): GO TO 520
1080 FOR o=1 TO 24: IF h(o)=0 THEN LET h(o)=y: PRINT AT 20,0;"I now have the ";c$(y): PRINT "What do you want to do now?": GO TO 3050
1090 NEXT o: PRINT AT 20,0;"I can't carry anything else": GO TO 520
1099 REM go
1100 LET n$=i$(4 TO 8)
1110 FOR y=1 TO 7: IF n$=b$(y) THEN GO TO 1140
1120 NEXT y: IF i$(4 TO 7)="back" THEN PRINT "I'm going back": PAUSE 50: GO TO 1170
1130 PRINT "Go where? I can't go that way!": GO TO 520
1140 IF d(y) THEN GO TO 1155
1150 PRINT "There is no exit ";b$(y): GO TO 520
1155 IF w=12 AND y=1 THEN GO TO 1630
1160 PRINT "I'm going ";b$(y): LET r=0: IF f(3) THEN LET cm=FN z(30)+m
1165 FOR x=1 TO 8: BEEP .03,-30: PAUSE 10: BEEP .03,-40: PAUSE 10: NEXT x
1170 LET m=m+1: IF y=1 THEN GO TO 1190
1180 GO TO 300
1190 IF w=12 THEN LET z=13: GO T
```

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```
O 315
1195 GO TO 3800
1199 REM look
1200 LET d=6: IF i$(6 TO 7)="at"
 THEN LET d=9: GO SUB 630: GO TO
 1220
1210 GO TO 1280
1220 IF b THEN GO TO 1250
1230 IF n THEN GO TO 1280
1240 GO TO 1290
1250 PRINT "I am examining the o
bject and"
1260 IF y>4 AND y<11 THEN GO TO
2160+y*10
1270 PRINT "it is definitely a "
;c$(y): GO TO 530
1280 PRINT "Do what? Please be s
pecific.": GO TO 520
1290 PRINT "I can't find that. I
 don't thinkI picked that up.Wha
t now?": GO TO 530
1299 REM inventory
1300 BORDER 4: PAPER 4: CLS : IN
K 0
1305 IF h>15 THEN PRINT '"I am w
eighed down with:": GO TO 1320
1310 PRINT '"  I have with me:"'
'" nothing at all"
1320 LET l=3: LET c=0: LET p=20:
 FOR o=1 TO 24
1330 IF h(o)=0 THEN GO TO 1370
1340 IF h(o)=10 THEN PRINT AT l,
c;"an ";c$(h(o)): GO TO 1360
1350 PRINT AT l,c;"a ";c$(h(o))
1360 BEEP .02,p: LET p=p-1
1370 IF c=0 THEN LET o=o+1: LET
c=16: GO TO 1330
1380 LET c=0: LET l=l+1: NEXT o
1385 IF h>15 THEN PRINT ''"..and
 my arms are getting tired!"
1390 PRINT AT 21,0;"Press any ke
y to continue...": PAUSE 0: LET
r=1: GO TO 400
1399 REM put
1400 LET d=5: GO SUB 630: IF b T
HEN GO TO 1430
1410 IF n THEN GO TO 1280
1420 GO TO 1290
1430 FOR c=e+3 TO 27: IF i$(c TO
 c+2)="bag" THEN GO TO 1450
1440 NEXT c: PRINT "Put it in wh
at, ";p$;"?": GO TO 530
1450 PRINT "With pleasure, ";p$;
"!": LET h=h-1: GO TO 520
1499 REM drop
1500 IF i$(4)="p" THEN LET d=6:
GO SUB 630: IF b THEN GO TO 1530
1510 IF n THEN GO TO 1280
1520 GO TO 1290
1530 LET t=0: FOR x=1 TO 20
1540 BEEP .005,t: LET t=t-1: NEX
T x
1550 IF y=8 OR y=9 THEN LET h(o)
=y+9
1560 FOR x=1 TO 2: IF b(x)=0 THE
N LET b(x)=h(o): PRINT "OK, ";p$
;". What's next?": GO TO 3070
1570 NEXT x: GO TO 1570+FN z(2)*
10
1580 PRINT "Oh dear, it's gone d
own a deep  hole, out of reach!
What now?": GO TO 3070
1590 PRINT "It's disappeared! An
 invisible  gremlin has stolen i
t! What now?": GO TO 3070
1599 REM describe
1600 IF i$(4 TO 5)="cr" THEN LET
 d=10: GO SUB 630: IF b THEN GO
TO 1250
1610 IF n THEN GO TO 1280
1620 GO TO 1290
1630 PRINT "The way is barred by
 the guard.": LET y=6: GO SUB 68
0: IF b THEN GO TO 1650
1640 PRINT "He won't let me pass
. What now?": GO TO 530
1650 PAUSE 100: PRINT AT 20,0;"T
he guard takes my ticket and   l
ets me pass."
1660 LET h(o)=0: LET sco=sco-y*2
: LET h=h-1: LET y=1: GO SUB 414
0: GO TO 1165
1699 REM drink
1700 IF i$(4 TO 5)="nk" THEN LET
 y=11: GO SUB 680: IF b THEN GO
TO 1720
1710 PRINT "I'm not carrying any
thing": GO TO 520
1720 LET f=0: LET f(4)=0: PRINT
"Mmm! I feel better now!": PRINT
 "Ready to move on?"
1730 GO TO 3060
1799 REM examine
1800 IF i$(4 TO 7)="mine" THEN L
ET d=9: GO SUB 630: IF b THEN GO
 TO 1250
1810 IF n THEN GO TO 1280
1820 GO TO 1290
1899 REM enter
1900 IF i$(4 TO 5)="er" AND w=13
 THEN GO TO 3800
1910 IF i$(7 TO 10)="exit" AND w
=12 THEN LET y=1: GO TO 1170
1920 PRINT i$( TO 5);" what? I d
on't see anything.": GO TO 520
1999 REM help
2000 BORDER 5: PAPER 5: INK 1: C
LS
2010 LET l=0: LET c=2: FOR y=1 T
O 6: PRINT INK 6;AT l,c;"HELP":
LET c=c+5: NEXT y
2020 PRINT '"Here are some of th
e words I canunderstand, ";p$;":
"
2030 PRINT '"north (n)";TAB 15;"
go";TAB 21;"drop": PRINT '"south
 (s)";TAB 15;"get";TAB 21;"look"
: PRINT '"west  (w)";TAB 15;"put"
;TAB 21;"open"
2035 PRINT '"east (e)";TAB 15;"e
at";TAB 21;"help": PRINT '"up (u
)";TAB 15;"run";TAB 21;"drink":
PRINT '"down (d)";TAB 15;"invent
ory (i)"
2040 PRINT '"...and plenty more
besides!": INK 7
2050 IF sco<50 AND m>5 THEN PRIN
T '"Remember! A map won't help h
ere!": GO TO 2095
2060 IF sco<200 THEN PRINT '"Kee
p collecting items of value!": G
O TO 2095
2070 LET y=6: GO SUB 680: IF b T
HEN GO TO 2090
2080 PRINT '"There's still somet
hing to find!": GO TO 2095
2090 PRINT '"Keep on looking. Yo
u're close!"
2095 PRINT ' INK 1;"  Press any
key to continue...": PAUSE 0: LE
T r=1: GO TO 400
2099 REM open
2100 IF i$(4)="n" THEN LET d=6:
GO SUB 630: IF b THEN GO TO 2130
2110 IF i$(d TO 11)="sesame" THE
N GO TO 2650
2115 IF n THEN GO TO 1280
2120 GO TO 1290
2130 IF y=4 OR y=11 THEN PRINT "
The ";c$(y, TO (e-d));" is now o
pen": GO TO 520
2140 IF y=8 OR y=9 THEN GO TO 21
60
2150 PRINT "I can't do that!": G
O TO 520
2160 PRINT "The ";c$(y, TO (e-d)
);"is open."'"I have a pile of j
unk. What now?": GO TO 3080
2199 REM run
2200 FOR x=1 TO 7: IF d(x) THEN
LET y=x: GO TO 1160
2205 NEXT x
2209 REM examine
2210 PRINT "There's a lot of roo
m inside": GO TO 530
2220 PRINT "It's a teleport tick
et to Earth!": GO TO 530
2230 PRINT "He says 'LEAVE ME AL
ONE!": GO TO 530
2240 PRINT "Top of the Pops is o
n! Great!": GO TO 530
2250 PRINT "The time is apparent
ly ";w;".0";x: GO TO 530
2260 PRINT "It squeals. It isn't
 very happy": GO TO 530
2299 REM eat
2300 LET d=5: GO SUB 630: IF b T
```

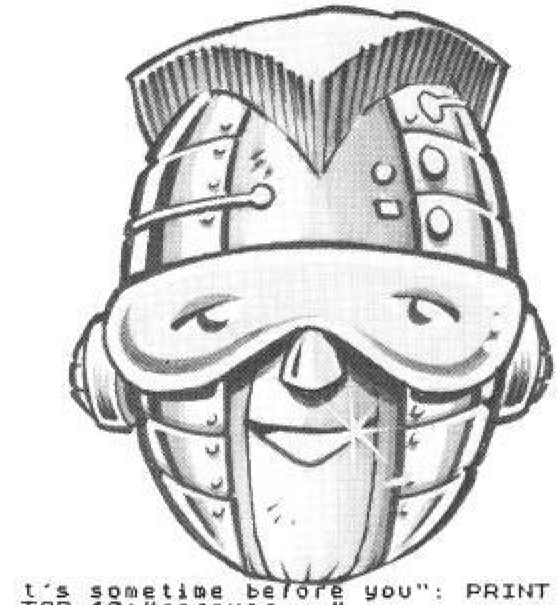


ADVENTURE

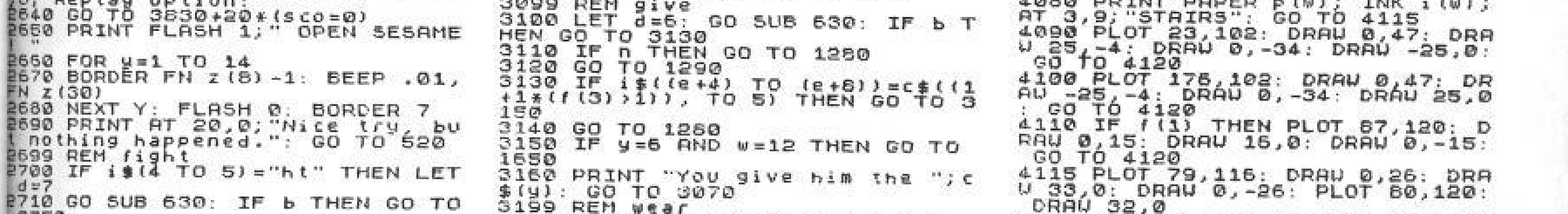
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```
EN GO TO 2330
310 IF n THEN GO TO 1280
320 GO TO 1290
330 IF y=7 OR y=10 THEN PRINT "
he ";c$(y, TO (e-d));" is not v
ry tasty.": PRINT "It would be
etter cooked. Next?": GO TO 308

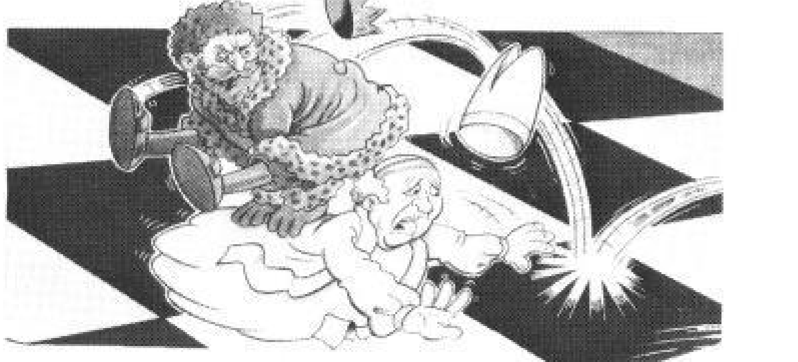
340 IF y=12 THEN GO TO 1720
350 PRINT "Don't be silly!": GO
TO 520
399 REM back
400 GO TO 1170
410 PRINT "I don't have any wea
ons": GO TO 520
420 IF f(3) THEN LET y=2: GO TO
2440
430 LET y=1: LET f(3)=5
440 IF f(3)>4 THEN LET x=2: GO
0 2460
450 LET x=0
460 FOR l=0 TO 21: PRINT PAPER
;AT l,0;TAB 31;" ": PAUSE 10: N
XT l
470 BORDER x: PAPER x: CLS : IN
 7: IF f(3)<5 THEN GO TO 2810
480 PRINT AT 12,10;"The ";c$(y)
AT 13,2;"strikes back and kills
you!"
490 GO TO 3830
499 REM talk
500 IF i$(4)="k" THEN LET d=9:
O SUB 630: IF b OR y<3 THEN GO
O 2530
2510 IF i$(9 TO 13)="eddie" THEN
 GO TO 2560
2515 IF n THEN GO TO 1280
2520 GO TO 1290
2530 IF y=1 OR y=7 OR y=10 THEN
PRINT "I don't think he understa
ds me.": GO TO 520
2540 IF y=2 THEN LET f(3)=f(3)+1
 PRINT "He looks pretty threate
ning!": GO TO 520
2550 PRINT "You'll have me talki
g to trees next! Be serious, no
.": GO TO 530
2560 BEEP .01,30: BEEP .01,30: P
RINT "Huh? What? Sorry, ";p$;","
2570 PRINT "I wasn't listening.
What's up?"
2580 GO TO 530
2599 REM quit
2600 IF i$(4 TO 5)="t " THEN GO
TO 2620
2610 GO TO 1280
2620 FOR l=10 TO 21: PRINT PAPER
 2;AT l,0;TAB 31;" ": NEXT l
2630 PAPER 2: INK 6: PRINT AT 13
,8;"Replay option:"
2640 GO TO 3830+20*(sco=0)
2650 PRINT FLASH 1;" OPEN SESAME
! "
2660 FOR y=1 TO 14
2670 BORDER FN z(8)-1: BEEP .01,
FN z(30)
2680 NEXT Y: FLASH 0: BORDER 7
2690 PRINT AT 20,0;"Nice try, bu
t nothing happened.": GO TO 520
2699 REM fight
2700 IF i$(4 TO 5)="ht" THEN LET
 d=7
2710 GO SUB 630: IF b THEN GO TO
 2750
2720 IF n THEN GO TO 1280
2730 IF y<3 THEN GO TO 2420
2740 GO TO 1290
2750 PRINT "I'm not ";i$( TO e-1
);"ing this poor mite": GO TO 52
0
2799 REM kill
2800 GO TO 2410
2810 PRINT AT 12,10;"The ";c$(y)
;AT 13,2;"knocks you unconscious
 with a"
2820 PRINT TAB 9;"single blow!"
2830 DIM h(24): LET sco=0: LET c
m=FN z(30)+m
2840 PAUSE 100: PRINT AT 16,3;"I
```



```
t's sometime before you": PRINT
TAB 10;"recover..."
2845 PAUSE 100: PRINT "  ...and
you have been robbed!"
2850 PAUSE 100: LET r=1: LET f(3
)=0
2860 LET f(2)=0+14*f(1)+w*(NOT f
(1)): GO TO 400
2899 REM attack
2900 LET d=8: GO TO 2710
2999 REM read
3000 IF i$(4)="d" THEN LET d=6:
GO SUB 630: IF b THEN GO TO 3020
3010 GO TO 1280
3020 IF y<>13 THEN GO TO 1250
3030 PRINT "It's a travel catalo
gue.It seemsthere is a teleporte
r nearby!": GO TO 530
3049 REM score updates
3050 LET h=h+1: LET b(x)=0: IF y
<16 THEN LET sco=sco+y*2
3060 GO SUB 4140: GO TO 470
3070 LET h(o)=y: LET h(o)=0: LET
 h=h-1: GO TO 3090
3080 LET h(o)=y+9
3090 IF y<16 THEN LET sco=sco-y*
2
3095 GO SUB 4140: GO TO 470
3099 REM give
3100 LET d=6: GO SUB 630: IF b T
HEN GO TO 3130
3110 IF n THEN GO TO 1250
3120 GO TO 1290
3130 IF i$((e+4) TO (e+6))=c$((1
+1*(f(3)>1)), TO 5) THEN GO TO 3
150
3140 GO TO 1280
3150 IF y=6 AND w=12 THEN GO TO
1650
3160 PRINT "You give him the ";c
$(y): GO TO 3070
3199 REM wear
3200 IF i$(4)="r" THEN LET d=6:
GO SUB 630: IF b THEN GO TO 3230
3210 IF n THEN GO TO 1280
3220 GO TO 1290
3230 IF y=5 OR y=9 OR y=14 THEN
GO TO 3250
3240 PRINT "Don't be silly!": GO
 TO 520
3250 PRINT "OK. What shall we do
 now?": LET h=h-1: GO TO 530
3800 FOR l=10 TO 21: PRINT PAPER
 2;AT l,0;TAB 31;" ": NEXT l
3810 PAPER 2: INK 6: PRINT FLASH
 1;AT 13,6;" WE'RE GOING HOME! "
: PRINT
3820 LET t=.5: LET p=-30: FOR y=
1 TO 60: BEEP t,p: LET t=t-.005:
 LET p=p+1: NEXT y: FLASH 0: GO
TO 3830
3830 LET sco=INT (sco/m): PRINT
AT 15,4;"Your final score is: ";
sco: BEEP .05,20: PAUSE 50
3840 IF sco>hisco THEN PRINT "
 A new HISCORE! Well done!": LET
 hisco=sco
3850 PAUSE 50: PRINT '"    Anoth
er go, ";p$;"? (y/n)"
3860 IF INKEY$="" THEN GO TO 386
0
3870 IF INKEY$="y" THEN GO TO 39
00
3880 IF INKEY$="n" THEN NEW
3890 GO TO 3860
3900 PRINT "         Same player?
(y/n)"
3905 IF INKEY$<>"" THEN GO TO 39
05
3910 IF INKEY$="" THEN GO TO 391
0
3920 IF INKEY$="y" THEN GO TO 29
0
3930 IF INKEY$="n" THEN GO TO 39
50
3940 GO TO 3910
3950 PRINT " Do you want instruc
tions?(y/n)"
3955 IF INKEY$<>"" THEN GO TO 39
55
3960 IF INKEY$="" THEN GO TO 396
0
3970 IF INKEY$="y" THEN GO TO 20
0
3980 IF INKEY$="n" THEN GO TO 26
0
3990 GO TO 3960
3995 STOP
3999 REM screen set-up
4000 BRIGHT 1: BORDER 7: PAPER 7
: CLS
4010 FOR l=0 TO 9: PRINT PAPER p
(w);AT l,0;"
     "; PAPER 2;"       ": NEXT
l
4015 PRINT PAPER 2; INK 5;AT 1,2
6;"HISCO";AT 3,26;"SCORE";AT 5,2
6;"MOVES";AT 7,26;"PANIC"
4020 INK i(w): PLOT 63,156: DRAW
 73,0: DRAW 0,-40: DRAW -73,0: D
RAW 0,40: DRAW -55,18
4030 PLOT 136,156: DRAW 55,19: P
LOT 63,116: DRAW -55,-19: PLOT 1
36,116: DRAW 55,-19: GO TO 4030+
FN z(2)*7
4040 PLOT 34,97: DRAW 39,18: PLO
T 60,97: DRAW 23,18: PLOT 86,97:
 DRAW 8,18: PLOT 112,97: DRAW -8
,18: PLOT 139,97: DRAW -24,18: P
LOT 165,97: DRAW -39,18
4045 FOR y=1 TO 7: IF d(y) THEN
GO TO 4050+y*10
4050 GO TO 4120
4060 PRINT PAPER p(w); INK i(w);
AT 3,10;"EXIT": GO TO 4120
4080 PRINT PAPER p(w); INK i(w);
AT 3,9;"STAIRS": GO TO 4115
4090 PLOT 23,102: DRAW 0,47: DRA
W 25,-4: DRAW 0,-34: DRAW -25,0:
 GO TO 4120
4100 PLOT 176,102: DRAW 0,47: DR
AW -25,-4: DRAW 0,-34: DRAW 25,0
: GO TO 4120
4110 IF f(1) THEN PLOT 87,120: D
RAW 0,15: DRAW 16,0: DRAW 0,-15:
 GO TO 4120
4115 PLOT 79,116: DRAW 0,26: DRA
W 33,0: DRAW 0,-26: PLOT 80,120:
 DRAW 32,0
4120 NEXT y: REM graphic 'AB','C
D','EF','GH' follow:
4130 IF f(3) THEN PRINT PAPER p(
w); INK 2;AT 4,15;"AB";AT 5,15;"
CD";AT 6,15;"EF";AT 7,15;"GH"
4140 PRINT PAPER 2; INK 6;AT 2,2
7;hisco;AT 4,27;sco;AT 6,27;m;AT
 8,26;"OVER"
4145 IF f(3) THEN PRINT PAPER 2;
 INK 6; FLASH 1;AT 8,26;"NOW!!":
 FLASH 0
4150 RETURN
9059 REM enter'GO TO 9060'to
auto-save program
9060 CLS : SAVE "alien city" LIN
E 10: PRINT "REWIND AND PLAY TO
VERIFY": VERIFY "alien city": PR
INT '"VERIFIED OK"
```



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```
2060 H=0:H1=0
2070 FOR I=1 TO 8
2080 FOR J=1 TO 8
2090 IF Z%(I,J)=2 THEN 2110
2100 H=H+Z%(I,J):H1=H1+1
2110 NEXT J
2120 NEXT I
2130 PRINT V$;
2140 IF 2*H>H1 THEN 2180
2150 IF 2*H=H1 THEN 2200
2160 PRINT"I HAVE WON BY";H1-H;" TO";H
2170 GOTO 2210
2180 PRINT"YOU HAVE WON BY";H;" TO";
   H1-H
2190 GOTO 2210
2200 PRINT"THE GAME IS A DRAW"
2210 PRINT V$;"[DOWN22]
   DO YOU WANT ANOTHER GAME? ";:GET Y$
2220 IF Y$="Y"THEN 180
2230 IF Y$="N"THEN PRINT"[CLEAR]":CLR
   :END
2240 GOTO 2210
2250 IF W(A,B-1)<>W THEN W(A,B-1)=W(A,
   B-1)+51
2260 IF W(A,B+1)<>W1 THEN W(A,
   B+1)=W(A,B+1)+51
2270 IF C9<3 THEN 520
2280 IF Z%(A,B-1)<>0 AND B>3 THEN W(A.
   B-2)=W1
2290 IF Z%(A,B+1)<>0 AND B<6 THEN W(A.
   B+2)=W
2300 GOTO 520
2310 IF W(A-1,B)<>W THEN W(A-1,
   B)=W(A-1,B)+51
2320 IF W(A+1,B)<>W1 THEN W(A+1,
   B)=W(A+1.B)+51
2330 IF C9<3 THEN 520
2340 IF Z%(A-1,B)<>0 AND A>3 THEN W(A
   -2,B)=W1
2350 IF Z%(A+1,B)<>0 AND A<6 THEN W(A
   +2,B)=W
2360 GOTO 520
2370 XX=2+4*Y:YY=21-2*X
2380 POKE((24-YY)*80+32768)+XX,X9
2390 RETURN
2400 A$="[RIGHT7]"
2410 PRINT"[CLEAR,DOWN3]";A$;"[RVS]
     [RIGHT]   [RIGHT] [RIGHT]
  [RIGHT]   [RIGHT] [RIGHT3] [RIGHT3]
     "
2420 PRINT A$;"[RVS] [RIGHT] [RIGHT2]
    [RIGHT2] [RIGHT] [RIGHT] [RIGHT3]
    [RIGHT3] [RIGHT3] [RIGHT] "
2430 PRINT A$;"[RVS] [RIGHT] [RIGHT2]
    [RIGHT2]   [RIGHT]   [RIGHT]
   [RIGHT3] [RIGHT3] [RIGHT] "
2440 PRINT A$;"[RVS] [RIGHT] [RIGHT2]
    [RIGHT2] [RIGHT] [RIGHT] [RIGHT3]
    [RIGHT3] [RIGHT3] [RIGHT] "
2450 PRINT A$;"[RVS]   [RIGHT2]
   [RIGHT2] [RIGHT] [RIGHT]   [RIGHT]
     [RIGHT]   [RIGHT]   "
2460 RETURN
```

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more disgusting nature than that!

Of course new adventurers may well with to cut their teeth on one of many text 'n' graphic games currently dominating the market; after all, they certainly seem in vogue at the moment. However I would cheerfully put my head on the line and advise against it. Very few of them are suitable for the uninitiated, not because I think they're particularly bad, just BORING. Believe me it's no fun watching a location slowly redraw itself for the umpteenth time! It can put you off adventuring FOR LIFE, if not longer.

That said I'll now contradict myself by recommending the text'n'graphics of PROJECT VOLCANO (for the Dragon 32 and 48K Spectrum from Mission Software). It's the first of a whole slew of games which you, as a member of the Mission Secret Agent Club, will be invited to participate in. Apparently a top secret missile command centre has been discovered hidden below an extinct volcano on the Rumanian and Yugoslavian border. It represents the heart of a massive missile complex covering the entire Soviet block and you, as a budding Bond, have volunteered to disable the place.

The game comes complete with an extensive briefing kit and is enormous fun. Says Mission's head honcho, Brian Goldsbrough (otherwise known as Commander Q): "We're inviting players to become part of a Secret Service, offering them missions which will lead all over the world. It's not like a one-off game, it's an invitation into a role-playing situation."

Nicely drawn

Less impressive is the loudly heralded TWIN KINGDOM VALLEY (for the Com 64, BBC and Electron from Bug-Byte). Unlike PROJECT VOLCANO which utilises a small graphics window, VALLEY etches oh-so-carefully over the entire screen, and while some locations are nicely drawn a great percentage are nigh on indecipherable. Playing the thing rapidly degenerates into a "Gee, I wonder where we're meant to be now?" kinda situation. A woolly adventure if ever there was one.

Customs

Adventuring itself is something of an art. The game has evolved its own rules and customs, the awareness of which can make all the difference between successful playing or total humiliation.

Here's a few simple tips to help you on your way:

*Always check your inventory before embarking on an adventure; you never know what could be cluttering up your pockets.

*If you're given the choice of friendship or violence when encountering a creature, always opt for the former. Good manners sometimes reap rich rewards. However, if you're offered no such choice despatch the thing as soon as possible. No point in playing coy.

*Don't believe all you see. Should you see a rickety bridge across a chasm, you can bet it's not there to help you cross! Avoid the obvious.

*Read signs, and if they sound odd, say them out aloud.

*Examine or search EVERYTHING. It's there for a reason.

*Wear whatever can be worn. Helmets, gloves flippers. Tog up well.

*Map your progress. This is an absolute necessity. Use graph paper if you can and mark each location with a descriptive note. DON'T attempt to draw the description of the locale, it doesn't work that way.

*Swear continuously.

Following all this and you'll soon be in business. The club's an odd one, but there's massive fun to be had. Happy hunting, gang.



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ZIS IS YOU...
OH, VOT A SCHWEIN YOU ARE!
HAPPY DOGGY
SCHULTZY VILL BITE ANYZING UND ANYVUN!
VOLTS
SCHULTZ
DIG, DIG, BRITISH FOOLS... FOR ZEM DER WAR IS OVER - VUNCE YOU STOP ZEM!
RAF
IT'LL END IN TEARS, TEDDY!
RABBIT SOFTWARE
AT THE BEST SOFTWARE STORES NOW!

GOOD GAME...

As exclusively revealed in last month's BIG K, Yorkshire Television — with a little help from a friend or two — is planning to launch an entirely new kind of video-game TV show this autumn. PAUL WALTON plugged himself into Follow-Up Mode and went behind the scenes . . .

THE GAME is coming — it's going to be *Tron's Revenge* on millions of prime-time Saturday evening TV viewers. After this videogames quizshow watching TV or playing yourself will never be the same again.

It's nothing to do with education (a la Beeb). Or tradition. It's got everything to do with fun . . . and the future. What will begin this coming autumn as a novel quizshow could well go on to become the first-ever fully fledged interactive TV.

John Meade is producer of The Game at Yorkshire TV and he would only give out a few guarded hints to BIG K about what to expect: "TV is such a dirty game," he explained. A pilot programme was shot in utmost secrecy. But Steve Lovering, a creator of The Game's concept, did peel back a little of the protective coating on what's already being called VTFX — or the *effects* of modern *TV*.

What these men have done is to put together the integrated digital technology required to *merge* signals from a videogame with both live studio film and pre-shot location film to create a single collage. And they decided first to apply this technical genius with showmanship and panache in a giant leap towards The *(ultimate)* Game.

"I want competitors to be able to play from their armchairs — its technically possible today," said Lovering. "It will happen as the concept of The Game is integrated at higher and higher levels." He's the creative director with the giant Hutton Company (who design the ads). A professional visionary.

Imagine the screen. You'll be sitting at the keyboard playing a game first off — viewers at home will see a split-screen of you playing the videogame, and the videogame screen action as well. But anybody who's watched darts on TV will know that this kind of presentation can get pretty boring.

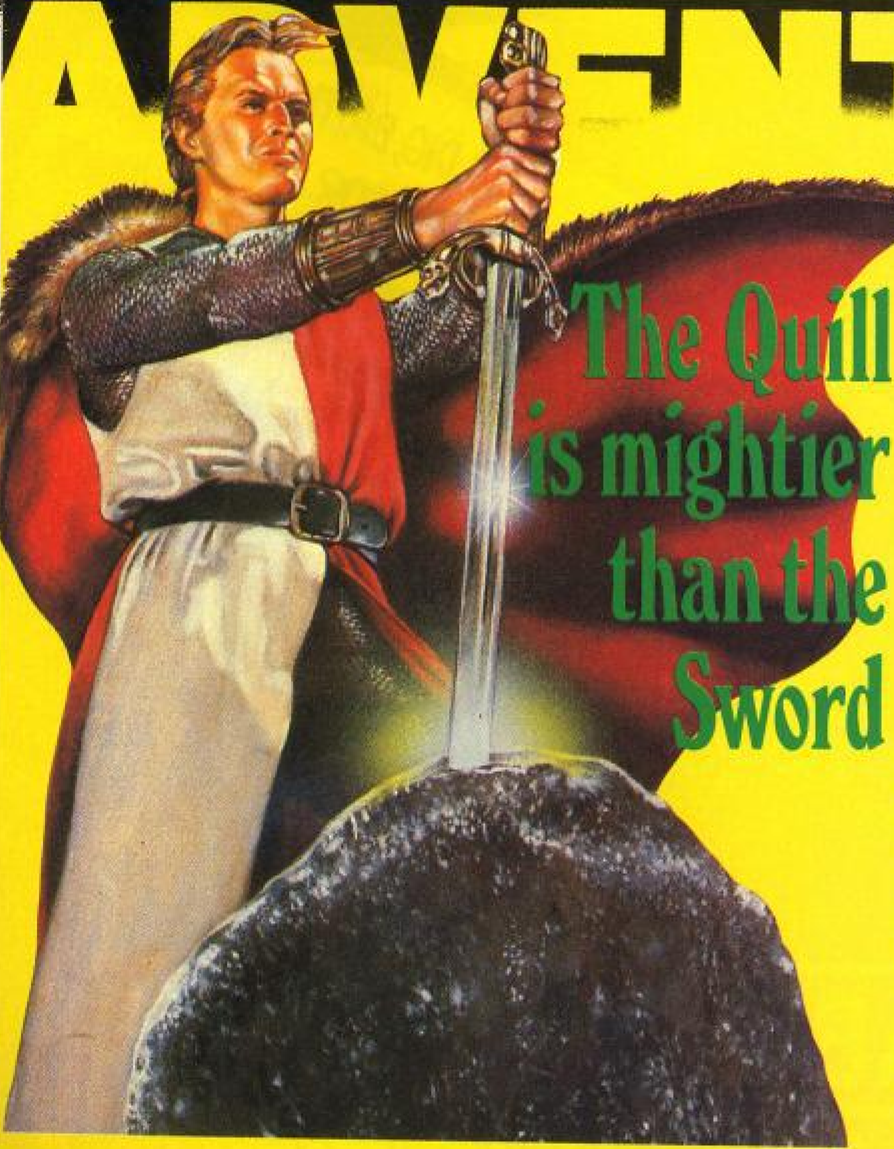
Next stop

The next step will be a television first anywhere in the world, employing a Quantel digitized graphics system, like that used to annotate items in a flash on News-at-Ten, or to create the flying Channel Four logo to pick up the player's image from the studio film and merge him or her into a complete videogames frame: the Space Invaders appear actually to attack the player.

To enhance the feeling of realism, contestants on The Game will be dressed for whatever period the videogame seeks to depict. But as you can well imagine it will still look like a badly cut film montage. So a



ADVENTURE EXTRA



The Quill is mightier than the Sword

Writing your own Adventures isn't as arduous as it used to be, thanks to a neato invention called The Quill. Commercial adventure programs written with the aid of this remarkable system are already appearing on the shelves.

DAVE RIMMER has been getting his fingers inky . . .

THE QUILL — price a mere £14.95 — is simply brilliant. It's an "adventure system" that provides you with all the necessary mechanics of a text adventure — 225 possible locations, objects, events and so forth — but leaves it up to you to decide what the locations are, how they connect up, what objects to find, where to leave them and so forth. In short, you write your own game. And that, frankly, is more fun than playing most of them.

If, like me, you're fed up with the standard sword 'n' sorcery, kill-the-goblin-find-the-treasure plotline, then this thing is a Godsend. It can be anywhere and involve anything you want. You are limited only by your imagination and sense of humour and — let it be said — by certain built-in parameters of the structure (on which more later) that are I suppose necessary.

A friend and I spent two happy afternoons recently writing a game based on a mutual aquaintance who's always depressed. The object is to cheer yourself up by visiting friends, going shopping, dealing successfully with parents, coping with your job and the like. Not as simple as it sounds. Getting into Marks & Sparks to buy the thick and creamy yoghurt you're going to need later on can be as difficult as bridging a bottomless chasm or killing that belligerent goblin, believe me. Naturally, by the time we'd finished it was crawling with in-jokes and comprehensible only to about three other people in the whole of Britain, but what a hoot we had doing it.

Despite what the manual says, there's no need to plan everything out beforehand. In fact it seems to be more fun if

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finishing touch will be added: scenery provided by pre-shot location film which is added as a third layer to the digitized Quantel frame.

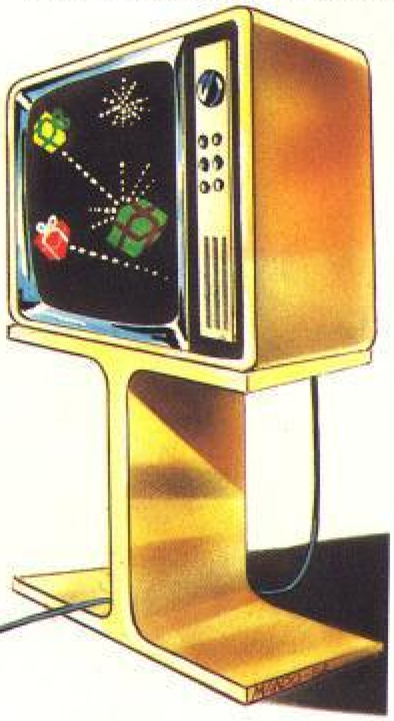
The overall effect is one of "believable realism," according to producer Meade. It was his job to shoot a pilot for The Game in January of this year, in conditions of utmost secrecy. This first programme, which will never be screened, was called *The Quest for Abigail* — a spoof on the Holy Grail story.

Adventure

An Oxford-based games software house called Insight Software prepared an adventure game especially for the pilot: this adventure house is destined to become a big name.

A live edition of The Game would entail three distinct sequences which follow the adventure. First of all the contestants must guess the period, location or flavour of the story — it might be anything from outer space to the inside of a molecule. Next, they will proceed through the adventure's machinations to uncover a hidden secret, fighting monsters all the way, in the shape of a guest personality. And finally they must work out just who is the mystery personality.

Insight weren't saying which micro *The Quest for Abigail* was written for (though en educated guess might settle as the Thorn-EMI Wren.) The choice of hardware is likely to cause a battle royal amongst the suppliers. And YTV weren't saying whether Insight would be employed to write or commission all of its games software, or how it would be distributed.



What is clear is that the TV station and an off-shoot of Hutton's called Ventech will collaborate to market each videogame as it is used in the show. And Ventech would like the pair to agree either a 'YTV-logo' machine or some standard which could also be promoted as an accompanying machine for The Game.

When it comes down to the nitty-gritty of marketing The Game detail becomes difficult to find, whilst prognostications about its future are more forthcoming.

Ventech is talking to that Prism/Micronet/Transam consortium which is getting involved in everything from the mooted ITV games machine to games software juke-boxes. Prism made its millions selling Sir Clive's baby mail-order.

But it isn't clear whether they are trying to get the right to use a cut-down version of that Wren micro (a bit steep for games players at £1,000), or just access to the Prestel-based Micronet. Whatever comes of this canoodling is sure to be a bit special.

As the prime distributor, Ventech would be handling the sale of software. But as a creative ally, it would also be looking to realise the potential of that technology which makes The Game special for television.

Potential

Consider what Lovering had to say about that potential: "I see the TV as just another form of access to a screen, with the potential to bring anything into people's living rooms. One day there will be as many micros as there are now TV in the living room, so we have got to start thinking about how they might work together. This could be live, interactive television," he said.

In principle Micronet 800 could be a vehicle to link people who have the more popular micros into the TV studio "live" using just an inexpensive modem and the telephone/Prestel connection.

This basic network could accommodate up to a hundred simultaneous players of The Game. Huttons took the possibilities so seriously that they looked in to all kinds of spin-off: viewers' "live" response to programmes or advertising is under consideration: fancy being able to tell politicians where to get off; or alter the ending of *Coronation Street!*

But of course this kind of two-way link could never be on the same scale as the local Cable TV franchises due to start during 1985 — unless the broadcast TV companies invest a great deal more in digital telephony, studio equipment and the large controlling computer systems like Quantel.

Interactive

Before they can begin to think about doing that they will need some indication of how we, the audience, react: now they look like getting that chance with The Game.

"We are thinking very, very hard about the possibility for interactive television, having made this technical breakthrough," was about the only comment producer John Meade had to make.

When the ITV companies finally agree to screen The Game in the autumn it will probably replace that awful quiz show *'3-2-1'*, Dustybin and all. More importantly it will be a major boost for the home computer market and is destined to become a prime-time advertising slot for them early on Saturday evening.

Whichever micro The Game is eventually played on, the sponsors could be looking at the kind of perpendicular sales growth that Acorn scaled after its link to television. And thankfully micros won't just mean education anymore ... The Game might not even be *remotely* good for you.

ADVENTURE

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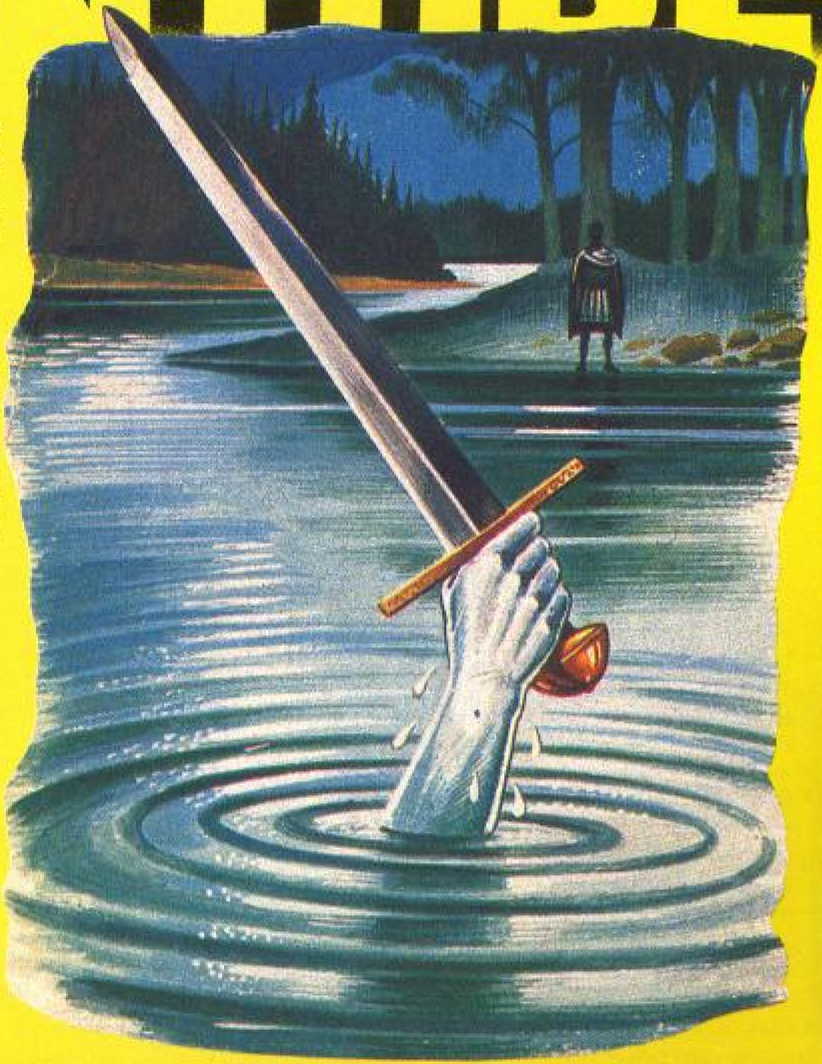
you start out with a vague idea and slot in the complexities as they occur to you. Once you've written two locations, for example, there's nothing to stop you slotting another in between.

"Have a nice day"

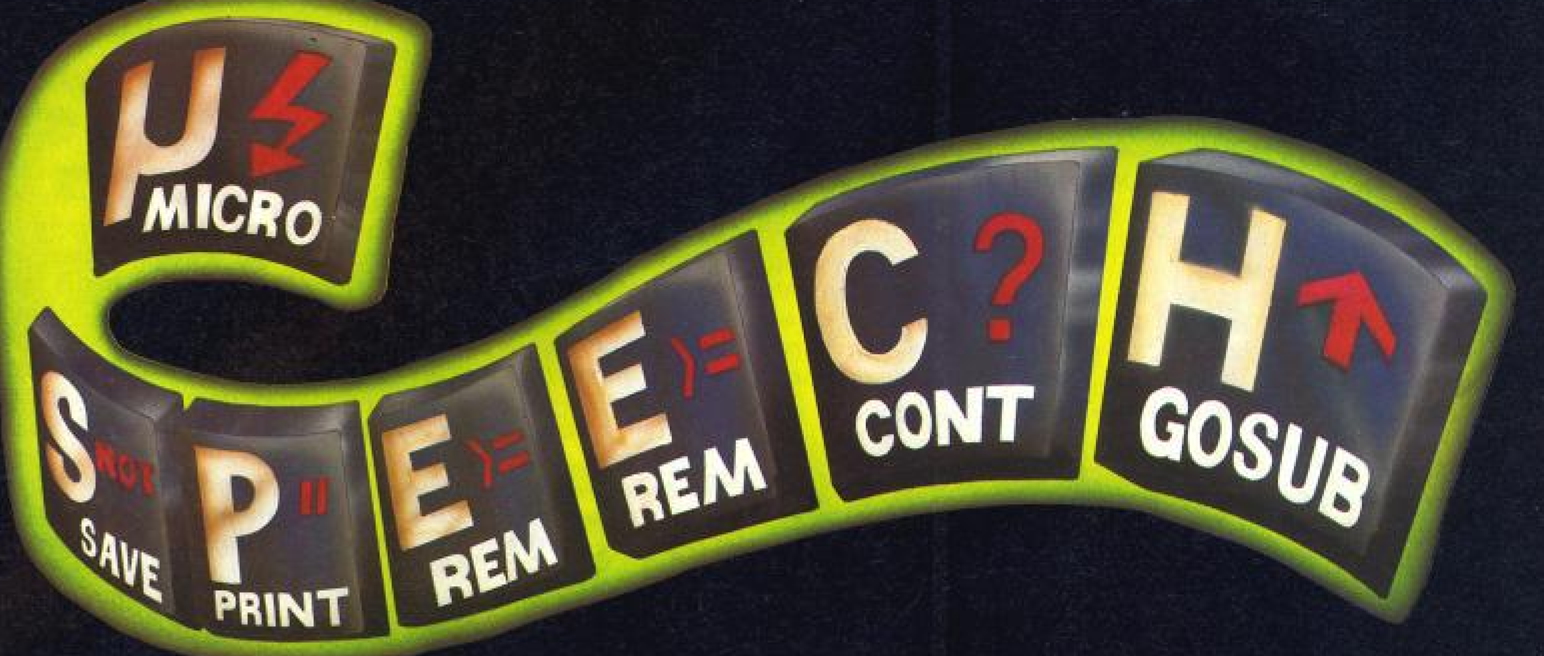
Attention to detail is of course vital, and you continually have to stop and run through it. The pile of lists and maps you have to keep can get a bit irksome, but that's only one of a few minor drawbacks. Another is the fact that you can't change some of the basic text: it's always the rather servile "I await your instructions", for example, and the sign-off line is invariably a sickly rejoinder "Have a nice day". But these are quibbles.

Put a bit of work into The Quill and you can write a game as quick and slick as any on the market. And if you want to sell one you've written with The Quill, the author asks only that you give his system a mention somewhere.

And now all the legwork has been taken out of the writing, maybe some more will go into creating new types of scenarios and problems. In other words, maybe it's bye-bye to that bloody goblin.



ADVENTURE



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- μ AND THE GAMES WITH SPEECH............ SPEAK FOR THEMSELVES

..........................ULTIMATE..Lunar Jetman......BUG BYTE..Birds and the Bees......OCEAN..Mr Wimpy..Hunchback..Moon Alert......QUICKSILVA..Mined Out..................
.........................ROMIK..3D Monster Chase..Shark Attack..Colour Clash......MARTECH..Blastermind......MOGUL..Las Vegas Lady......CRYSTAL..The Island..................
....................DIGITAL FANTASIA..Mysterious Adventures (Parts 1-10)......LYVERSOFT..Lunar Rescue......BRITANNIA..Grand Prix Driver......CDS.. Time Bomb..............
....ARCADIA..Mushroom Mania......PSS..Blade Alley......MR MICRO..Crazy Golf..Punchy..Harlequin......DkTRONICS..Maziacs...............................

(some of these games are new versions of original programs)

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Basically (Cyril) the idea is that you man a revolving 75mm AA turret. Down on your head come the enemy paratroops. Down on your head come the enemy paratroops, dropping like leaves from transporter planes. Blast the swine! Actually, there's a major conceptual mistake here, since — for even the most bizarrely homicidal maniac — the very idea of potting paratroopers in mid-air is extremely repugnant.

Anyway, a good touch now emerges, since the revolving action of the turret is very accomplished; that said, this is about the only aspect of the program it's easy to like (do bear in mind this review refers exclusively to the Commodore version, since we didn't like *Paratroopers* enough to run the other versions). You have your choice of mobile or static turrets, by the way.

Bug City emerges not far into the game. A certain combination of turret movement and blasting causes an apparent momentary crash. Result: death. I assume this is a bug, since there was no apparent plot justification.

Every now and again a dirty great tank rolls through and crushes you to pieces — the result of allowing too many Red Devils to get themselves groundborne.

All in all an unsatisfactory game, with a Nuremberg-style plotline and an unhappily bug-like habit of hanging up just when you don't need it. As if you'll care. — **T.T.**

Game: PARATROOPERS
Maker: RABBIT SOFTWARE
Machine: COMMODORE 64; VIC-20; SPECTRUM 48K
Format: cassette
Price: £5.99
Rating: none

K	=	Could Be Better
KK	=	Could Be Worse
KKK	=	Unsurpassable



From the moment the go button is thumbed *Bandits At 3 O'Clock* shows its class. Two figures break from flight HQ and race for their biplanes which leap into the air (at a touch of the 'climb' key) after a short take-off run. Then it's each player for him(or her)self as the two planes engage in deadly dogfights.

Only a shot to the propeller will down your enemy convincingly. As the loser ploughs into the soil a gravestone marks his demise. Accumulate enough of these and your opponent's runway length is reduced making takeoffs decidedly tricky. Nice touch. Seven kills and you're the victor.



To this already good mix you can add tasty ingredients like flak, clouds, airship obstacles and night or day modes, all easily called up from an options menu. There's also a useful single player practice mode. I would have liked a full single player option but *Bandits* is designed for and best played by two people.

Bandits is one of those rare games that can be classed as sheer fun. It looks good on the screen (graphics limitations of the electron aside), is professionally presented and has a very high level of play value. An absolutely wizard game, chaps. — **R.B.**

Game: BANDITS AT 3 O'CLOCK
Maker: PROGRAM POWER
Machine: ELECTRON
Format: cassette
Price: £6.95
Rating: KKK

It was... ...aaaargh

An entertaining not to mention seabound version of that familiar board game *Cluedo*, in which you play a detective all at sea on the luxury liner 'Pacific 1'. Any chances of a mid-Atlantic romance are rapidly sunk with the arrival of an ominous telegram. It seems that there's a dastardly plot to destroy the liner and all on board, including HRH King David (gasp!). That fanatical loon Mr Sinister has slunk onboard disguised as a passenger and is at this very second busy planting an explosive device somewhere. Needless to say you must deduce his identity before time runs out and the ship's reduced to so much driftwood. There are three riddles to solve: the location of the bomb, the object it's disguised as (bible? teapot? pram?) and the identity of Mr Sinister himself. Once you have these three elements you use the 'Suspect' routine. This will tell you if any of your notions are correct. However, if you strike paydirt the computer won't tell you which element is right. You must solve the mystery by deduction. It's a nicely executed idea, with a multi-player option that makes it a winner in the family fun department. If you're into board games this could be well worth investigating. — **S.K.**

Game: DEATH CRUISE
Maker: VIRGIN GAMES
Machine: DRAGON 32
Format: cassette
Price: £8.00
Rating: KK



Game: SHUTTLEZAP
Maker: DRAGON DATA
Machine: DRAGON 32
Format: cassette
Price: £12.95
Rating: none

VOLGA SPACEMAN

WHEN YOU overlook the crude graphics; when you overlook that this game is for the unexpanded VIC; when you overlook the fact that it has about as much to do with cosmonauts as black bread has to do with pretzels; then Cosmonaut isn't a bad game.

It's your basic running, jumping, standing still game. To free your trapped spacecraft you must descend through several stormtrooper-infested levels and find the off switch for the tractor beam. Lifts connect the levels. The stormtroopers shoot to kill.

OK for a wet afternoon **R.B.**

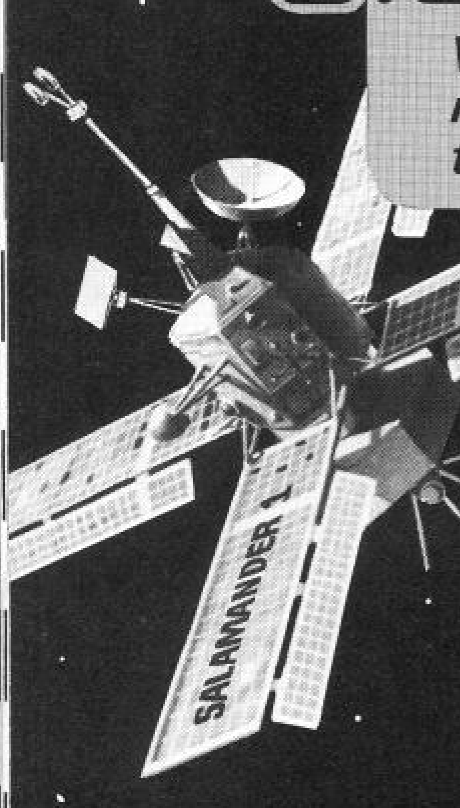
Game: COSMONAUT
Maker: MELBOURNE HOUSE
Machine: VIC 20
Format: cassette
Price: £5.95
Rating: K

WE HAVE BORE-OFF

Naff NASA nonsense that's guaranteed to induce intergalactic size yawns. As pilot of the slowest space shuttle ever bolted together you must crawl into the upper atmoshpere and disable a fleet of hostile alien satellites. Presumably by boring them out of the skies. It's a punishing task. Shuttlezap is in fact a futuristic cousin to Dragon Data's other notable dodo, Jumpjet. As before a reasonable concept has been sunk by the use of Basic, which is far too slow for this kind of program. But like its predecessor it features some impressive speech synthesis. Strange electronic comments pester you throughout the game. It's like having someone with a bad throat hanging over your shoulder. A pity the routines couldn't have found their way into a better game. All in all, not the right stuff. — **S.K.**

MY DREAM

What would you buy if you could buy what you want — money no object? We asked a panel of experts to unleash their imaginations — and their greed.



Pete ("The Hat") Neale (with Peter Ohlson) of Salamander Software.

"Given as much money as I wanted I'd like a system large and powerful enough to run the biggest Dungeons & Dragons campaign in the world!

"Firstly, the CPU. This would have to be extremely fast to be able to cope with the large number of people participating in the game. This CPU would be something based on the Josephson Junction, super-cooled for speed, using lasers for all I/O. There would need to be at least one of these for every country, linked worldwide by several satellites in geostationary orbit. Attached to each CPU would be at least 1 gigabyte of hard disk storage.

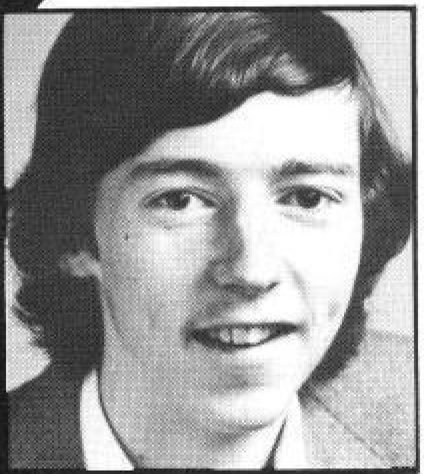
"At the user end of things there would be an intelligent colour graphics terminal along the lines of the BBC microcomputer. Attached to this would be a laser printer and laser disc. The majority of communications with the computer would be spoken so a sophisticated voice recognition module would be included, with a larger vocabulary than most people's and the ability to check syntax and correct grammar. (Why not be fun and educational at the same time?) Output from the computer would be mostly by a speech synthesis module, allowing for inter-part arguments, and stereo sound effects thrown in. Headphones are, of course, optional extras.

"Software is very important. Aside from all the general driving software, a nice touch would be a 'Genuine People Personality' generator which would bestow individual personalities on all the monsters and non-player characters met.

"The last and possibly most important thing would be a full-time team of crack programmers to keep the system up and running at all times. And, of course, enough change so that we could all live happily ever after."

Projected cost: Around £10 billion (not including cost of satellite launch vehicles or VAT).

Greed Rating: Disgusting



Ian Weatherburn: Imagine Software programmer. Author: *Zip-Zap* and *Alchemist* for the Spectrum.

"Working each day with Imagine's powerful Sage 4 mini computer [12mb Winchester disk drive and 1mb RAM] on which we develop our games, makes coming up with a dream rig difficult. But I think that at this time I would very much like to have a *Sinclair QL*, simply because it's the 68000 based machine with the best instruction set.

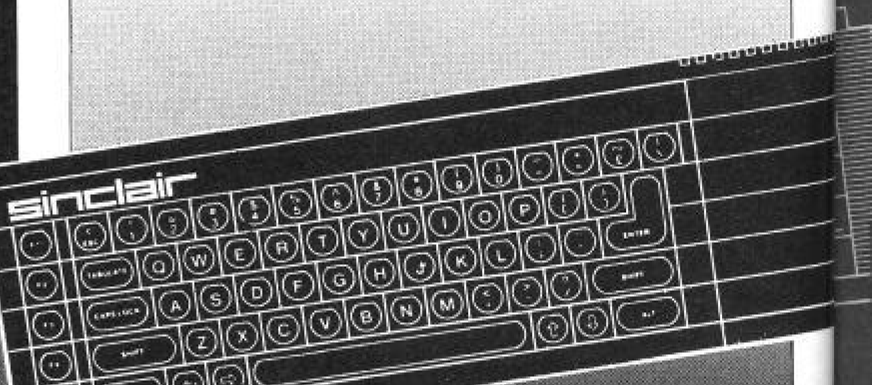
"To my mind the QL's only drawback is the Microdrive storage system but someone is bound to come up with a 'proper' disk drive for it so that won't worry me too much.

"With the basic QL I'd like a good quality monitor and a printer — the interface is already built into the QL, plus, of course, the better form of storage needed.

"The QL is of course still a very new and unproved machine but I like the look of its graphics capabilities. Although it's being pushed as a business micro there's a lot of talk about games for it. Some people have speculated on 'super' adventure games, utilising the 128K memory. That remains to be seen. I think there'll be games equal to at least the best level on the Spectrum to start with and then they'll improve as people gain more experience."

Projected cost: £1,000.00

Greed Rating: surprisingly low



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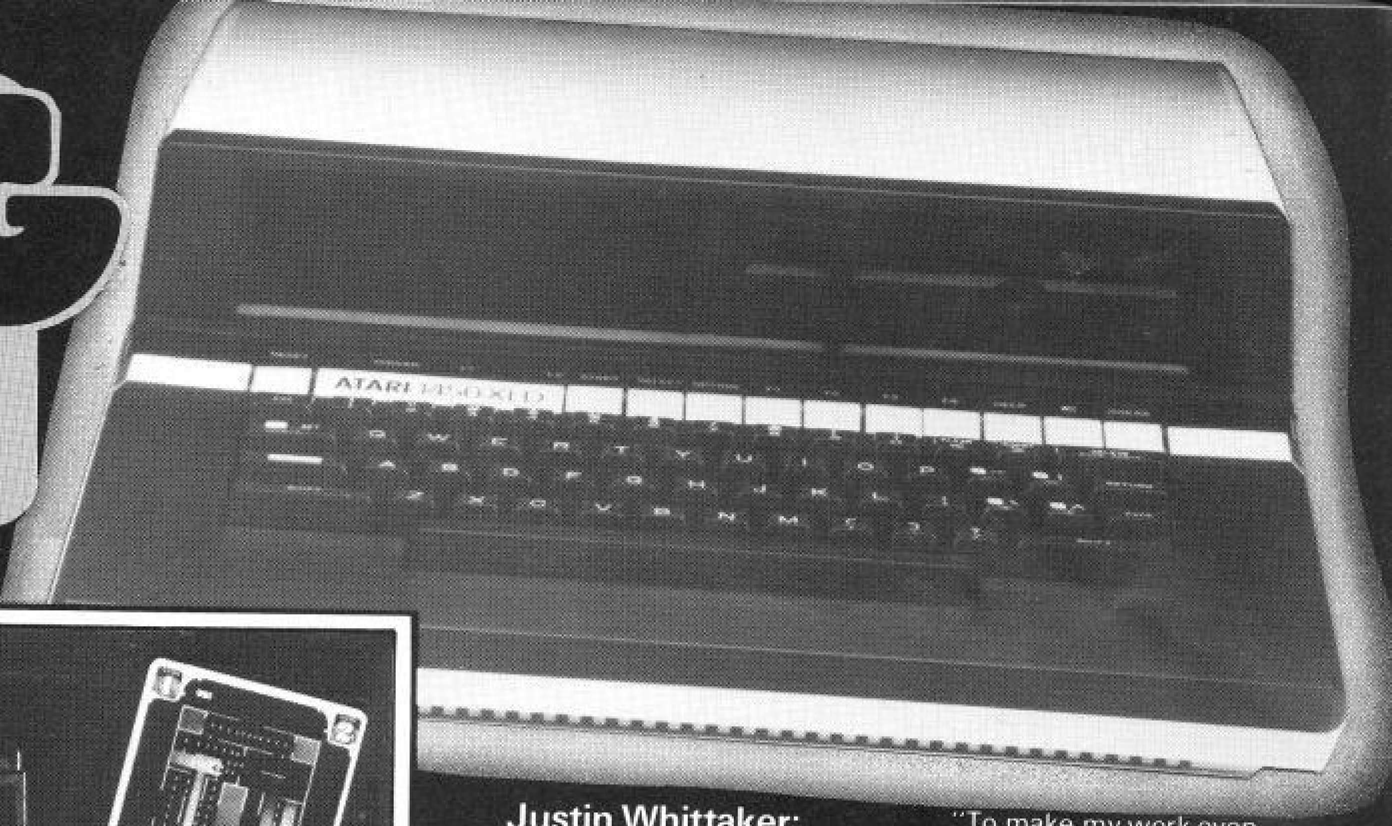
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Paul Walton: computer journalist.

"My dream machine's a reality; the MB Games *Vectrex* mini-arcade game. And the reason is . . . immediate addiction to their graphical games. Why was I lyrical about something which I could afford to buy for myself? Easy — because it's a conceptual leap forward over other micro games in almost every department. And because supporting it is sure to bring on yet more software for it.

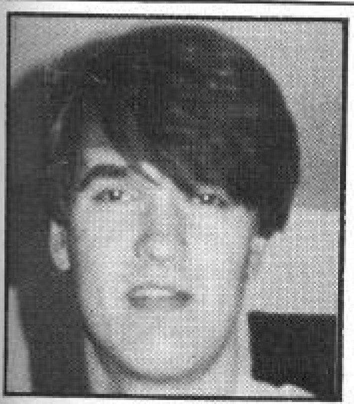
"Vectrex does what it does by concentrating on those three ingredients for which arcade games were designed: audio-visual stimulation; 'sucking-in' power to draw you in; and absolute control of the action.

"It's down to the vector (or VECTor Resolution EXtra) graphics screen, a powerful joystick controller and sound output chips . . . and good ol' imagination!

"You can have your videodiscs — I know they're cartoons; that's not reality. I don't want more power, more memory — or even more colour.

"I'm a man of modest tastes."

(NB: Walton owns a £2,000+ Wang Word-processor. — Ed.)



Projected cost: £150.00 (with software)

Greed Rating: humble to the point of absurdity

Justin Whittaker: freelance programmer. Author: *The Lone Raider* for Atari Home Computers.

"Given unlimited cash I'd like the top of the *Atari* Home Computer range, the *1450XLD* with built-in dual disk drives (unfortunately not on sale in Britain yet). To that I'd add a very high quality Sony monitor and an Atari 1027 letter quality printer.

"Graphics are very important in writing games so to help me in that area I'll have Atari's *Touch Tablet* and the 1020 four-colour plotter, for working out designs and printing out screens.

"A speech synthesiser would come in very handy to de-bug my listings. I'd get the computer to read out the listing so that I can check it as I go along!

"To make my work even easier I'll have a modem so that I won't have to keep travelling up to Atari's offices — I'll just phone my games in! A Winchester disk drive would also be nice so that I never need buy another disk again.

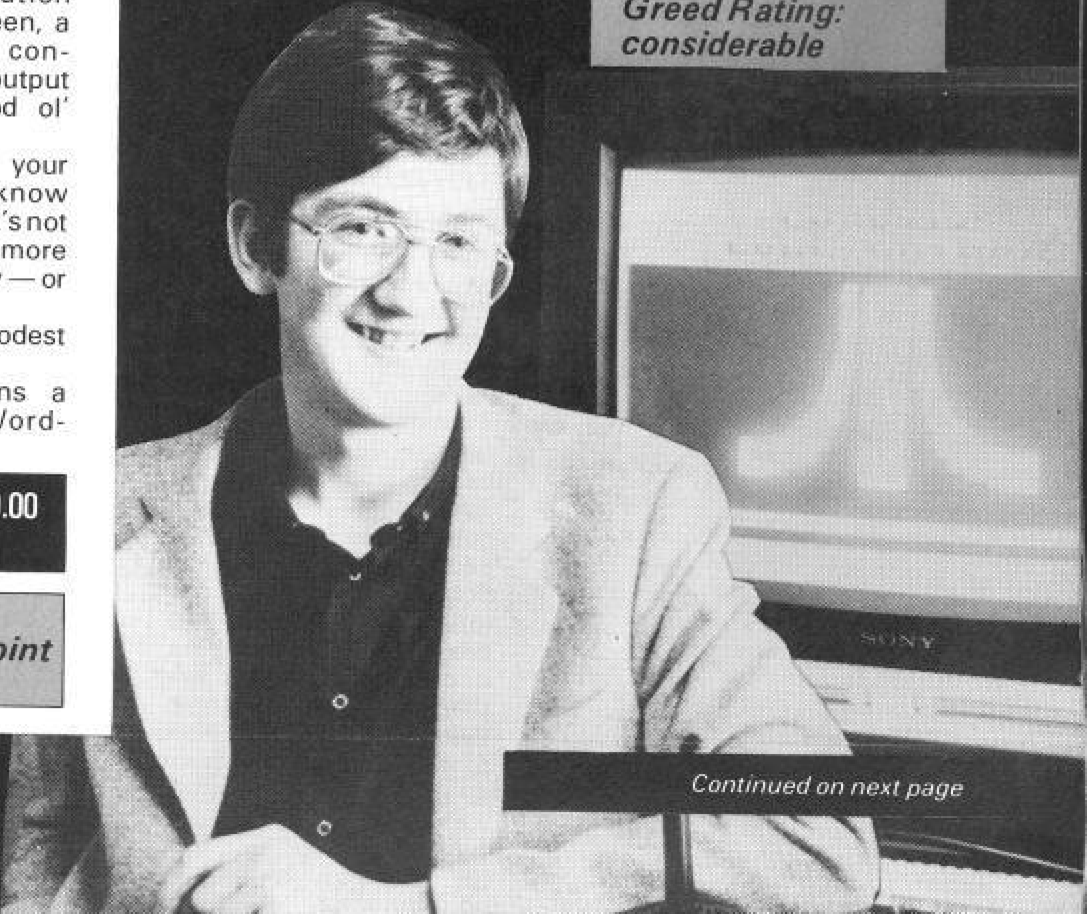
"I'll settle, too, for a really responsive joystick. One called *Le Stick* will do. It has no moving parts. You just hold it, move your hand around in the direction you wish to move the objects on-screen and mercury switches do the rest.

"Purely on the hobby side, I like music so I guess I'll link in a synthesiser to my rig plus, for good measure, a multi-track mixer with which I can play around with my compositions.

"I think that'll do me for now."

Projected cost: £3,000+

Greed Rating: considerable



Continued on next page

MY DREAM RIG





Tony Tyler: Editor, *Big K.*

"I suppose it's indicative that what I ended up with — after throwing out a load of junk I may tell you — was almost equally divided between practical use and poseworthiness.

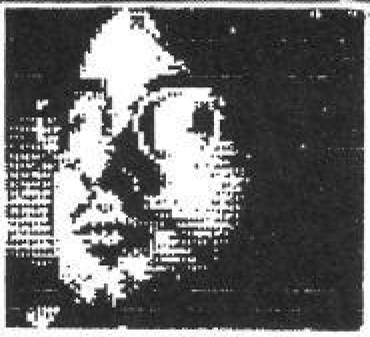
"For the latter there's really no alternative to a Notebook Computer (so-called), of the Tandy or *NEC 8200* type. Computer hacks have lately taken to attending launches, trade fairs, etc with these luscious gadgets nonchalantly under the arm — like a Shia militiaman with his inevitable AK47.

"I spend more time word processing than I do playing games, so my overall requirement is for a useable wp system; then again I *do* spend quite a lot of time playing games, mainly adventures, so I also need some mainline computing ability plus commonality since without that there's not likely to be many adventure games for me to play.

"It's the latter that rules out the ACT Apricot, obvious choice as it is in every other way. So I think it has to be the *Apple IIe* with an 80-column card and a brace of decent disc drives. And an excellent daisywheel printer. *And* a modem so I can be ready for the day when anybody else I know gets one. *And* a colour plotter so that I can arrange screen dumps of all those graphic masterpieces I know I'll never write."

Projected cost: £3,500.00

Greed Rating: sizeable



Andy Green: freelance programmer and journalist. Author: *Ultima Zone* (Tansoft) and *Them* (Virgin) for Oric-1.

"As a machine code programmer I'd base my dream rig around the *BBC micro*. It's blindingly fast and has plenty of interfaces with which to communicate with other micros. Atop the Beeb would sit a high-resulution monitor (for colour graphics and 80-column text) and on top of that a non-erasable laser video disc for storage, with a couple of gigabytes per LP sized disc (who needs to erase a program when you've got a million megabytes to play with?).

"Sticking out of the back of the BBC would be a 7220 controlled Graphics Engine. A 1024 x 1024 pixel screen in 256 colours, with hardware zoom and pan controlled by an Apple graphics tablet. This would be interfaced through the RS423 and have custom software to run it and would be ideal for producing new game shapes and backgrounds

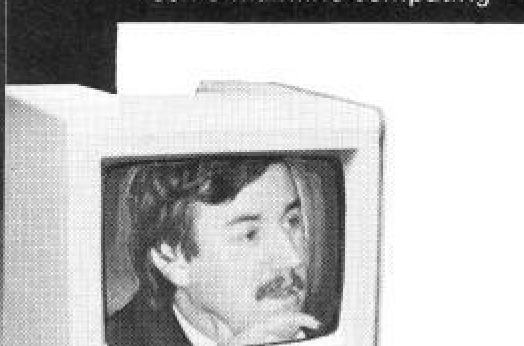
"With the Beeb's built-in mega-speed assembler, writing the code for a 6502 system is an easy as pie. A Z80 and 16032 second processor (this is a dream, right?) would have other cross assemblers for all the popular CPUs.

"I'd use a battery-powered, hand-held, *Microwriter* with 64K of low power CMOS RAM and a microfloppy drive as a portable 'notepad', the contents of which can be downloaded into the BBC when I get home, or even through a built-in acoustic modem down the phone lines if I'm away.

"All this stuff is either available right now or could be built from parts available now. The catch is . . . the bill. Dream on!"

Projected cost: £5,000.00

Greed Rating: substantial



Richard Burton: computer innocent.

"When we're talking about my dream rig we're talking about love at first sight. I speak of a computer that is yet to come (to Britain) — the *Apple Macintosh*.

"When I clapped optic nerves onto this little beauty that was it, Jack! Everything — monitor, processor, disk drive — came packed in one neat plastic box. Add the *Imagewriter* (printer — another neat box), a lovely keyboard, and a cute little mouse and there was all I wanted. Even the software, word processor, graphics designer, spreadsheet, was bundled in and ready to go. It just looked so good.

"I'm sorry, but I'm one of those people that can be seduced by a nice piece of design work. A machine can be as slow as syrup or have a BASIC that requires membership of MENSA to comprehend, but if the design is aesthetically pleasing — it's for me!

"As if I needed to be sold any further, when I actually got my hands on a Macintosh the romance blossomed. I had the thing up and running, doing word processing, graphic work and printing out the results within 20 minutes, without even seeing an instruction manual. The mouse controller combined with on-screen symbols made the whole machine just ooze 'user-friendliness'. Apple have even thoughtfully provided a handy bag into which the Mac will pack.

"Okay, it's not a games machine. I'll take a *Spectrum* and a *Colecovision* to fulfil those needs. Finally, to justify my dream rig, I'll have the best modem money can buy, access codes to all the world's largest databanks and unlimited free use of British Telecom's international service!"

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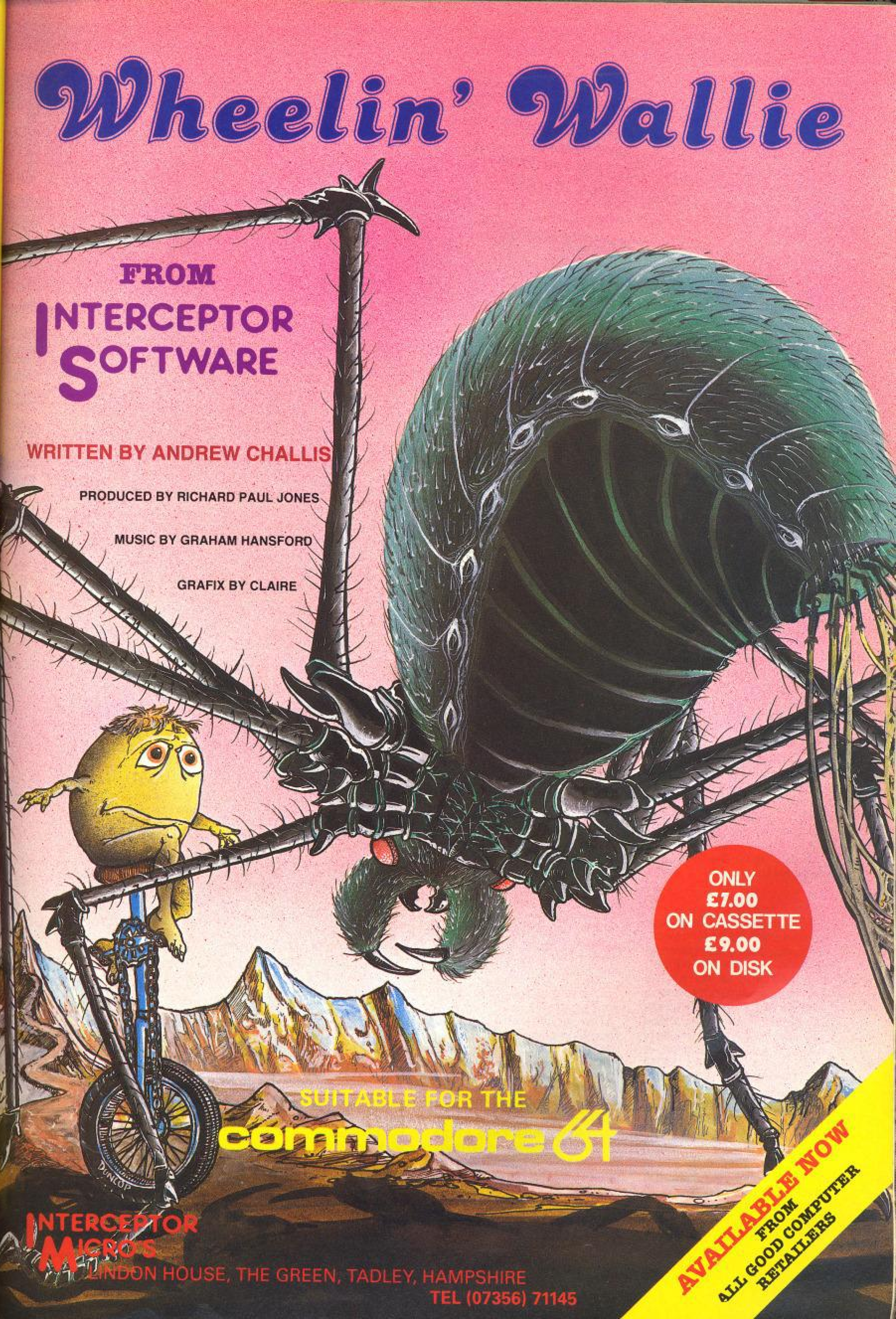
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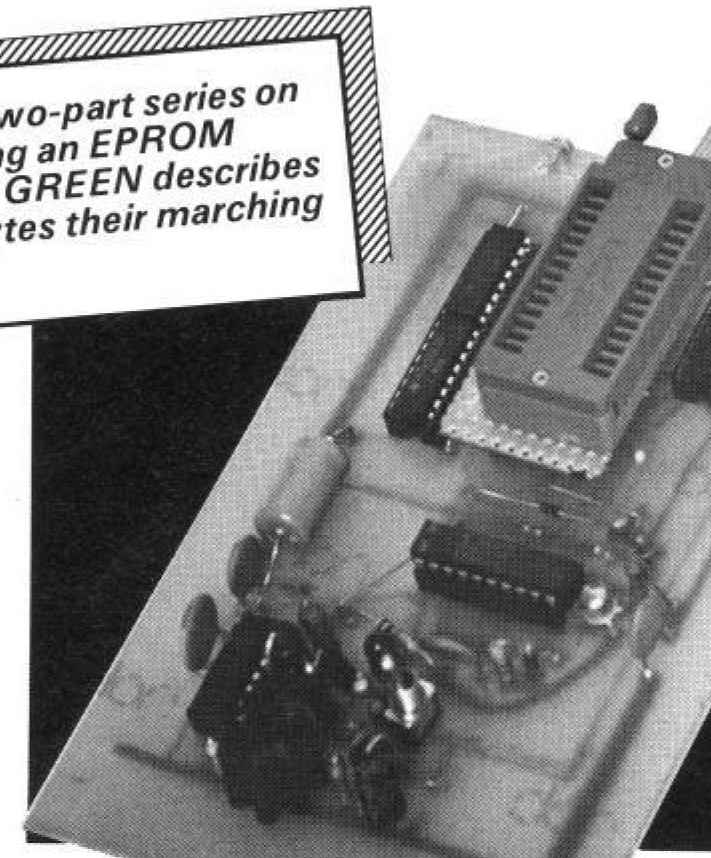


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TALKING SIDEWAYS

In the second of his two-part series on building and operating an EPROM programmer, ANDY GREEN describes how to give those bytes their marching orders.



LAST MONTH'S article described how to build an EPROM programmer for the BBC micro; this month's tells you how to organise your own assembly code programs so they can be used in the sideways ROM system.

Note that the sideways ROMs aren't supported by operating systems of less than 1.0, so I suggest if there's anybody left with 0.1 then grab a 1.2 quick: you can't use discs or the *Wordwise* up system without one.

All sideways ROMs live in the address range &8000 to &BFFF, only one being 'active' at any one time. The number of the ROM currently selected is determined by a latch at &FE30, and operating system commands exit to select a particular ROM.

Although you can have up to four sideways ROMs on the standard BBC, the operating system can handle up to 16, and 'extender' boards are available with empty sockets to make up the full complement.

Paged ROMs are used in several ways by the BBC. One is selected upon a 'hard' break or power up as being the current language (usually BASIC). The language ROM is selected by scanning the ROMs from number 15 down to 0, and using the first language found.

Discs

Whenever the language wants to talk to an IO device, say discs, it asks the operating system (which is NEVER switched out) to do it. The operating system notes which ROM called it up, and selects an appropriate specialised sideways ROM to do the dirty work. When the access is over, the specialised ROM (the FILING SYSTEM ROM) goes back to the operating system, which reselects the langauge ROM and returns back as if from a simple subroutine.

For the moment, we'll assume you've got a machine code program you want to blow into EPROM and use in your machine like you'd use *Wordwise*. You can't just plonk the code in and hope, because the operating system has to know some vital facts about what the ROM is for. Is it a language or a filing system ROM? What's the name of the ROM?

So the first twenty-thirty bytes of each ROM are given over to answer these important questions.

Byte	Contents
00-02	JMP to language entry
03-05	JMP to service entry
06	ROM type (use &81)
07	Copyright pointer
08	Version number of ROM
09...	Title string, printed if this ROM is selected as language
xx-xx+3	Always &00,&28,&43,&29 (C)
xx+4	Copyright message, terminated by an &00 byte

The rest of the ROM is for your program.

The service entry is a little more complicated. Whenever anything weird or momentous happens inside your BBC, the Operating System sees if it can handle it itself, and if it can't it asks the paged ROMs if they know anything about it. Each ROM must have a little routine to answer questions put to it by the OS. This subprogram is the service routine.

All kinds of strange 'services' are sent to the sideways ROM system, but only two

FIG.

```
   10REM EXAMPL
   20[OPTY%:.STBL JMP INIT:JMPSERVICE:EQ
UB&81:EQUBCPYRH-STBL:EQUB1:EQUS"TITLE ST
RING":.CPYRH EQUB0:EQUB&28:EQUB&43:EQUB&
29:EQUS"1984 Copy me and I'll kick your
teeth in":EQUB0
   30\
   40\
   50\
   60.INIT \ Your program starts here
   70\
   80\
   90\
  100.SERVICE CMP#9:BNESER1:\ if it's no
t a *help service try ser1
  105\
  110LDA(&F2),Y:CMP#&0D:BEQP%+5:.CLEAN L
DA#9:RTS: \ if it isn't a general *HELP
(ie *HELP DFS) then don't respond
  115\
  120LDY#0:LDAHERE,Y:BEQP%+8:JSRPR:INY:B
NEP%-9:BEQCLEAN:\respond by printing the
 string at HERE and return with Acc inta
ct so the next ROM can respond.
  125\
  130.SER1 CMP#4:BEQP%+3:RTS:\If not an
unrecognised * command then return witho
ut action
  131LDA(&F2),Y:CMP#ASC("M"):BNECLN1:INY
:LDA(&F2),Y:CMP#13:BNECLN1:\If the * Com
mand isn't M<return> then return without
 action
  132TXA:PHA:LDA#142:JSR&FFF4:PLA:TAX:LD
A#0:RTS:\ Start up this ROM and return i
ndicating no other ROM should take any a
ction.
  133.CLN1 LDA#4:RTS
  135\
  150.HERE EQUS "*Help response goes her
e":EQUB0
 9999]:PAGE=&1900:GOTO90
30000MODE7:B$="":INPUT"Save Exampl? : "
A$:IFA$<>"Y"THENSTOP ELSE PRINTCHR$30;~P
AGE;~TOP:FORY%=0TO7:B$=B$+CHR$(Y%?&7C00)
:NEXT:OSCLI("SAVE EXAMPL "+LEFT$(B$,4)+"
"+RIGHT$(B$,4))
```

```
   5HIMEM=&67FF:LOMEM=&4650:CLEAR:?&FE6
2=&FF:?&FE60=0:LOMEM=&4650:SOCK=15
 · 10FORY%=0TO3STEP2:P%=&A01:[OPTY%:.TRO
UT SEI:LDA#SOCK:STA&FE30:LDY#0:.BL LDA(&
74),Y:STA(&70),Y:INC&70:BNEP%+4:INC&71:I
NC&74:BNEP%+4:INC&75:LDA&70:CMP&72:BNEBL
:LDA&71:CMP&73:BNEBL:LDA&F4:STA&FE30:CLI
:RTS:]:NEXT
  20MODE7:PRINT'"Now assembling:":Y%=4
  30P%=&8000
  40L%=P%:W%=1
  50FILE$=" EXAMPL*"
  60A$=MID$(FILE$,W%,7):IFA$="*"THEN110
  70IFLEFT$(A$,1)="+" AND (Y%=6)THENW%=
W%+7:GOTO60
  80A$=RIGHT$(A$,6):PRINTTAB(0,2+W%/7);
A$;" Pass ";-(Y%<>4)+1;:W%=W%+7:OSCLI "L
OAD "+A$+" 1E00":O%=&6800:PAGE=&1E00:GOT
O0
  90PRINTTAB(30,0);~O%:IFY%=6THENPRINTT
AB(15,1+W%/7);"Sending";:?&70=L% MOD256:
?&71=L%DIV256:?&72=(P%AND255):?&73=(P%DI
V255):?&74=0:?&75=&68:L%=P%:CALLTROUT:GO
TO60
 100GOTO60
 110IFY%=4THENY%=6:GOTO30
 120PRINTTAB(0,10);"Done":END
```

FIG. 2

need concern us, the *HELP expansion service and the unrecognised * command service.

Typing *HELP will list all the ROMs currently in your machine (with the exception of BASIC), so we'll want our new ROM to support this.

Whenever you type a * command, the OS searches through its own little dictionary of * commands it knows, eg *HELP, *TAPE, *FX. If the command isn't found it doesn't give up yet — it asks the paged ROMs if they know the unrecognised command. Each ROM should respond to its own name in a * command: for example *Wordwise* can be called from BASIC by typing *WORDWISE. This wasn't understood by the OS, so it asked the paged ROMs if they knew the command, the *Wordwise* ROM recognised it and hence selected itself as the current language.

Service

The OS communicates with the service routine with the A,X and sometimes Y registers. The Accumulator always contains the Service Type that is being requested. A zero indicates that another ROM has already answered the service call, and the OS is just going through the rest of the ROMs as a matter of course. An &04 indicates an unrecognised * command has been made, and that the command can be found at (&F2),Y.

An &09 means the user has just typed *HELP and can you please announce yourself. The rest of the line after the *HELP is pointed to by (&F2),Y, enabling the ROM to answer specific queries. For example, typing *HELP UTILS with the DFS ROM will tell you all about the DFS utilities. A *HELP <Return> means the ROM should respond with its name only.

The X register contains the ROM number that the OS is currently looking at, from 0 to 15. The contents of the X and Y registers should be preserved.

Routine

You should exit from a service routine using a RTS instruction with the accumulator set to zero if the service was performed by this ROM and shouldn't be offered to any others. If, as in the *HELP instruction, the service was performed but should be offered to the rest of the paged ROMs as well, or the service wasn't performed at all, the accumulator should be preserved at the value at which it entered the service routine.

An example ROM identifier section and service routine is given in Fig.1.

Sideways ROMs can also be used in the ROM filing system mode. Yes, the ROM filing system! You can select it by typing *ROM (like *TAPE, *DISC) and it works rather like the tape filing system, only you obviously can't save anything to ROM.

Speech

BBC owners who add a speech synth to their micros also finally get to use the mysterious masked 'hole' on the left-hand side of the keyboard. This is for use with 'serial' ROMs which also work on the ROM filing system but aren't accessed the same way as sideways ROMs. Serial ROMs should be available shortly — that's an 'Acorn shortly' . . . a new word for *eons* — containing extra word sata for the speech system (which badly needs it), as well as games and the like from Acornsoft.

More data can be found on serial ROM protocols in the excellent *Advance Users Guide* and Acorn do one of their great Application Notes on the subject.

Millions

Before you rush off to look up the data and manufacture serial ROMs in millions, remember that only people with the speech synth can use the serial ROM capability, which ain't many. This may account for the reticence of Acorn re: serial ROM software (in sharp contrast to the prompt and efficient service they are justly renowned for). Yeah. The moral of the story is do your ROM software in sideways format for now.

When developing your software to run as a sideways ROM it is more than a little wise to plug in a 'sideways RAM' so that every time you make an alteration you don't have to blow a new EPROM . . . An 8K wide 6264 RAM chip is pin-compatible to a 2764 EPROM and can be plugged into some sideways ROM expander boards notably Watford Electronics' board and the Sir Version 2 board. You can't just plug it into a normal sideways socket.

Sideways

The program in Fig.2 works like the 'A' programs in *Goad Your Code* (last month), assembling source files one by one — only instead of sending the machine code to another micro or storing it on disc, this program stores it instead in a sideways RAM chip. The socket number that the ram chip is in should be put into the variable SOCK.

Note that the BBC will only talk to ROMs that were in the machine at the last BREAK, so you may have to hit break before the BBC will recognise that your RAM-ROM exists.

Rum, eh?

SUFFERERS

from hi-tech paranoia on this or any other subject should write to:

ANDY GREEN
BIG K, Room 2026,
IPC, King's Reach Tower,
Stamford St., SE1 9LS.

PROGRAM: MINI GOLF

```
0 REM ADAPTED FOR VIC BY H. COLE
10 O=36875:FOR J=O-1 TO O+2:POKE J,0
   :NEXT:POKE J,15
20 PRINT"[CLEAR,DOWN8]"TAB(6)"[RVS]
   MINIATURE"SPC(15)"GOLF[RVOFF]"
   :FOR J=1 TO 2100:NEXT
30 A$="      ":B$=A$+"[LEFT6]"
   :Z=SQR(2)/2:PRINT"[CLEAR,RVS,
   DOWN18]"A$A$A$"12  ";
40 PRINT"[RVS]DIRECTION [RVOFF]"A$"
   [RVS]  1.5STRENGTH  [RVOFF]"A$"
   [RVS]9   3";
50 PRINT"[RVS]HOLE [RVOFF]O[RVS]
     PAR [RVOFF] [RVS]
       STROKES [RVOFF]   [RVS]
   [RVOFF]   [RVS]   6 [UP5]"
60 R=30720:T=6743:F=1:FOR J=38796 TO
   38905:B=0:IF F>16 THEN B=6
70 POKE J,B:F=F+1:IF F=23 THEN F=1
80 NEXT:POKE 8185,160
90 POKE O+4,PEEK(T):T=T+1:M=PEEK(T)
   :FOR J=7680 TO 8075:Q=M
100 T=T+1:B=PEEK(T):IF B<8 THEN M=B
   :Q=M:GOTO 100
110 IF B<16 THEN Q=B-B:GOTO 100
120 IF B>225 THEN K=T:T=5974+3*B
   :GOTO 100
130 IF B=28 THEN T=K:GOTO 100
140 IF B>128 THEN A=160:F=B-129
   :GOTO 170
150 IF B<28 THEN A=PEEK(6615+B):F=0
   :GOTO 170
160 B=B-9:A=PEEK(6642+B/20)
   :F=B-20*INT(B/20)
170 FOR B=J TO J+F:POKE B,A:POKE B+R,Q
   :NEXT:J=J+F:NEXT
180 POKE 8154,PEEK(T+1):M=PEEK(T+2)
   :N=PEEK(T+3):POKE 8147,PEEK(8147)+1
   :T=T+4:A=126
190 F=32:W=F:X=M+RND(1)/2:Y=N+RND(1)/2
   :P=7657+22*N+M:K=PEEK(P+R):POKE P,A
   :POKE P+R,1
200 PRINT TAB(32)B$"[DOWN]"B$
   :GOSUB 800:PRINT TAB(32);:POKE O,0
   :POKE O+2,0
210 GOSUB 830:IF J>13 THEN PRINT"[UP5]
   ":GOTO 200
220 B=-J*/6:PRINT"[UP5]"
   :PRINT TAB(54);:POKE 8130,63
230 GOSUB 830:IF J>10 THEN PRINT"[UP5]
   ":PRINT TAB(54)B$;:GOTO 230
240 POKE O,232:J=10*J+2.1*J*RND(TI)+.4
   :C=C+1:E=E+1:GOSUB 800
250 PRINT"[RVS]"A$A$A$"12  [UP2]":D=P
   :V=Y:U=X
260 S=0:POKE O,0:POKE O+2,0
   :IF F=32 THEN 630
270 IF F=99 THEN 410
280 IF F=100 THEN 430
290 IF F=101 THEN 450
300 IF F=103 THEN 470
310 IF F=78 OR F=77 THEN 590
320 IF F=233 THEN 530
330 IF F=223 THEN 510
340 IF F=105 THEN 570
350 IF F=95 THEN 550
360 IF F=174 OR F=218 THEN X=U
   :GOTO 650
370 IF F=160 THEN Y=V:GOTO 650
```



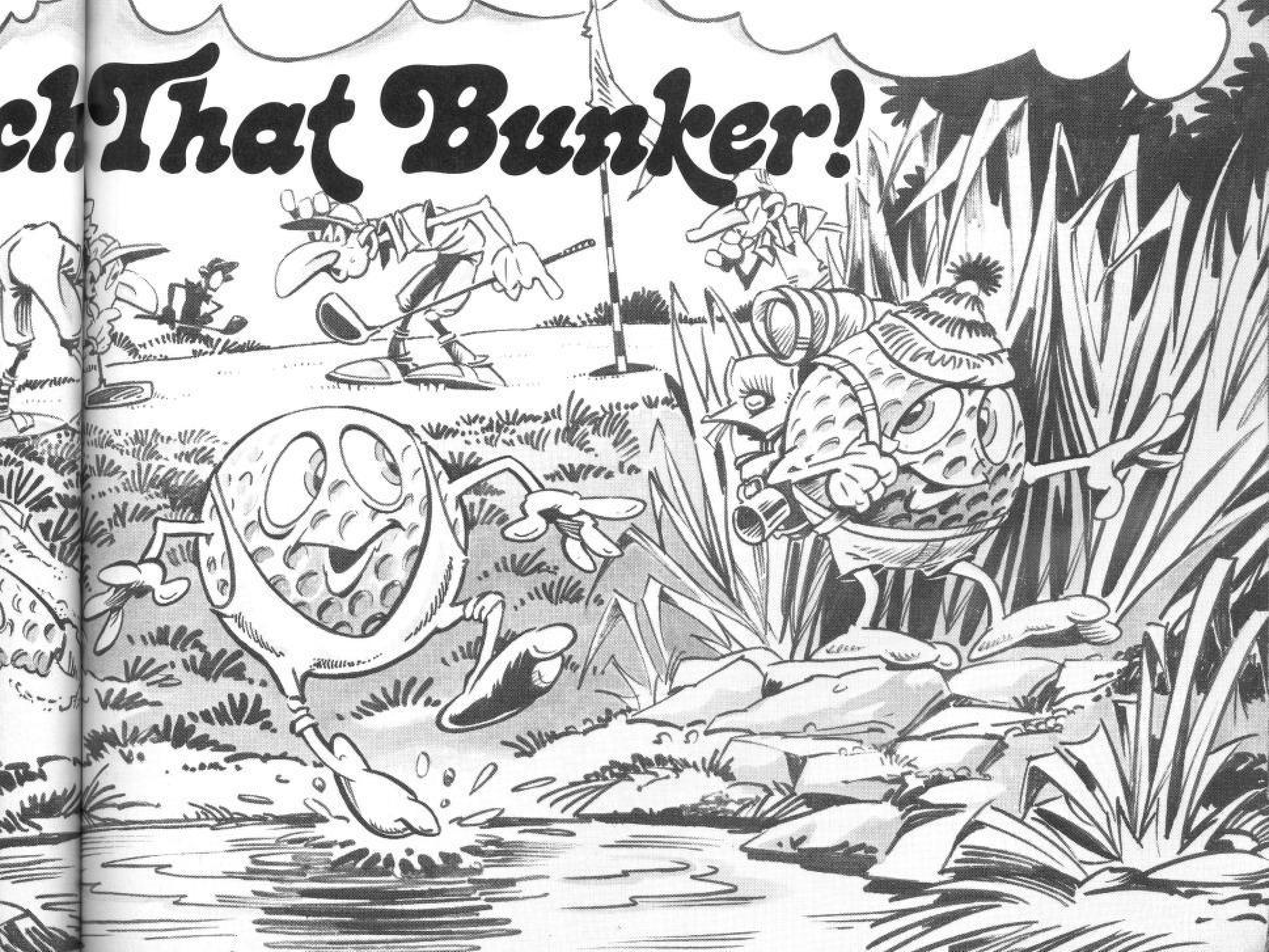
FOR VIC 20
by H. Cole

You don't have to be a member of a swish, pricy gold club — not that you'd want to — in order to brandish, a niblick (or whatever they're called) with aplomb (or whatever it is). Just type in the prog, dust off your ball — and, tee off!

```
B+R,Q
2)
47)+1
(1)/2
E P,A
 O,O
[UP5]
[UP5]
I)+.4
:D=P
```

```
380 IF F=81 THEN 610
390 POKE O+2,200:IF F=102 THEN 490
400 IF F=127 THEN J=0:S=3:GOTO 630
410 IF COS(B)>=0 OR Y-N>.5 THEN 630
420 B=-B:GOTO 620
430 IF COS(B)<=0 OR Y-N<.5 THEN 630
440 B=-B:GOTO 620
450 IF SIN(B)>=0 OR X-M>.5 THEN 630
460 B=-1*B:GOTO 620
470 IF SIN(B)<=0 OR X-M<.5 THEN 630
480 B=-1*B:GOTO 620
490 B=B+*RND(TI)/4-/B:J=J-14
   :IF J<1 THEN S=4
500 GOTO 630
510 IF COS(B)<Z AND SIN(B)>-Z GOTO 630
520 GOTO 560
530 IF SIN(B)<Z AND COS(B)<Z GOTO 630
540 GOTO 580
550 IF COS(B)>-Z AND SIN(B)<Z GOTO 630
560 B=/2-B:GOTO 620
570 IF SIN(B)>-Z AND COS(B)>-Z GOTO 6
   30
580 B=3*/2-B:GOTO 620
590 IF P=D THEN 630
600 ON F-76 GOTO 560,580
610 POKE O,140:J=J-8.:B=B+*RND(TI)/9
   -/18:IF J<4 THEN S=2
620 POKE O,215:J=J-3
630 POKE D,W:POKE D+R,K:POKE P,A
   :K=PEEK(P+R):POKE P+R,1:W=F:D=P:Q=A
   :IF J<1 THEN 730
640 J=J-1:V=Y:U=X:Y=Y+.49*COS(B)
   :X=X+.49*SIN(B)
650 M=INT(X):N=INT(Y):P=7657+22*N+M
   :A=PEEK(6649+INT(2*(X-M))+2*INT(2*
   (Y-N)))
660 IF P=D AND A=Q THEN 640
670 IF N>18 THEN Y=Y-.5:GOTO 650
680 IF N<1 THEN Y=Y+.5:GOTO 650
690 IF M>22 THEN X=X-.5:GOTO 650
700 IF M<1 THEN X=X+.5:GOTO 650
710 IF P<>D THEN F=PEEK(P)
720 GOTO 260
730 IF S=2 THEN 770
740 IF S=4 THEN PRINT"[RVS]
   YOU ARE IN SAND[RVOFF,UP]"
750 IF S=3 THEN PRINT"[RVS]
   WATER - 1 STROKE[UP]":E=E+1:C=C+1
   :B=+B:GOTO 640
760 GOTO 200
770 FOR J=0 TO 9:POKE O,PEEK(6622+J)
   :FOR K=1 TO 100:NEXT:NEXT
780 IF PEEK(8147)=57 THEN PRINT"[HOME]
   GAME OVER":END
790 C=0:GOTO 90
800 S=1:IF E>9 THEN S=0
810 D=9:IF C>9 THEN D=8
820 PRINT TAB(D)C SPC(S)E"[UP5]"
   :RETURN
830 P$="":FOR J=1 TO 6
840 GET F$:IF F$=""THEN 840
850 IF VAL(F$)=0 AND F$<>"0"AND F$<>"
   ."THEN 870
860 P$=P$+F$:PRINT F$;:GOTO 920
870 IF ASC(F$)<>20 THEN 900
880 IF J=1 THEN 840
890 PRINT" [LEFT2] [LEFT]";:J=J-2
   :P$=LEFT$(F$,LEN(F$)-1):GOTO 920
900 IF ASC(F$)<>13 THEN 840
910 PRINT" ";:J=6
920 NEXT:PRINT"":J=VAL(P$):RETURN
```

ch That Bunker!



GOAD YOUR CODE...

PART TWO

. . . the 6502 Way. In the second part of ANDY GREEN's series, he shows you how to adapt BBC code for ORIC.

IN LAST month's 'Goad Your Code' we set up the 'A' assembly control programs for the BBC, and examined how to use the assembly system. This month we'll see how to connect up your BBC to an Oric-1 or Atmos, and make a start on the example game. For reasons of space it's been decided to drop the Commodore 64 as a target micro and instead concentrate on the BBC itself and the Oric/Atmos as a 'token' target micro.

The best way to transfer data between two computers is to use a parallel interface. This is around ten times faster than an RS232 link and almost every micro has a parallel interface of one sort or another while very few include RS232 as standard.

For the Oric or Atmos, then you'll need two 20-way IDC (Insulation Displacement Connectors) sockets and a sharp scalpel. Connect up one socket to one end of the ribbon cable, squeezing heavily with pliers to close up the socket on the ribbon cable. Note the little arrow which points to pin one on the socket, and make sure that the red stripe on the ribbon cable goes to that pin. This end is the end that goes to the BBC's user port on the underside of the machine. Now take the other end and slice it up as a Figure 1, fitting it into the other IDC socket as shown in Figure 2.

Bumps

The second socket goes to the 'Printer' port on the Oric. Note that IDC sockets have little bumps on one side, so you can only insert them one way.

Since the first article was written I found out a better method of getting the data into the Oric or Atmos, so you'll need to use the program in Figure 3 as the 'A' program (instead of the program in the first article) if you are not using the BBC as the target machine.

Okay; a quick overview of what needs to happen to get your program running on the Oric. At the start of a session you load in a special downloader program into the Oric off cassette (details follow) that enables the Oric to receive data from the parallel link we just built.

Whirring

Start up the 'A' program on the BBC by pressing f9 then f2. The disc drive should start whirring as the 'A' program loads up each source file and assemble it. After the disc drive starts up, press CAL-#9700<Return> on the Oric to execute the downloader program.

As the BBC assembles each source file on the second pass it sends the object code down the lead we just built into the Oric, where the downloader program accepts each byte and stores it in the correct location. When it's finished, both the BBC and the Oric return to their Basics. You can now use the CALL statement on the Oric to execute the code you've just downloaded from the BBC. It's quite a good feeling to see your first program — all written on a BBC — working on the Oric!

The downloader, written in machine code, is created by typing in the program in Figure 4 on the Oric. As you can see from the listing, the code that this program pokes in starts at &9700 and goes on to &9789. After running the program, CSAVE "D",A#9700,E#978A to make a copy of the downloader to tape. From now on you'll only have to CLOAD the downloader from tape and CALL#9700 to use it.

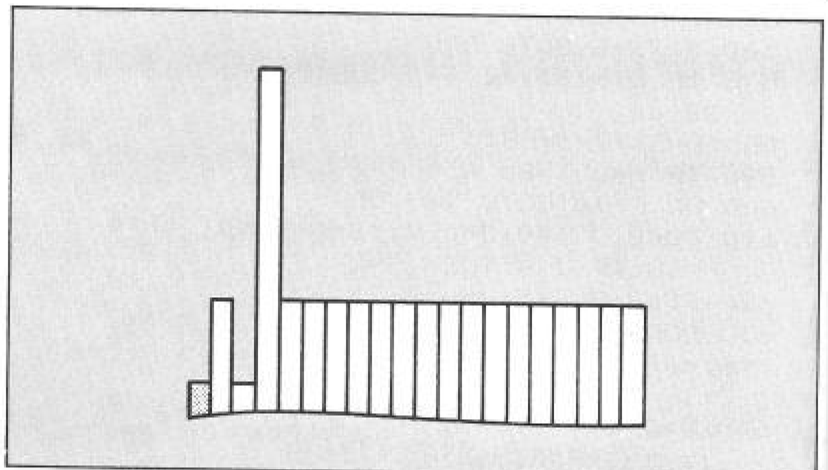


FIG 1. Cutting pattern for ORIC end of ribbon cable

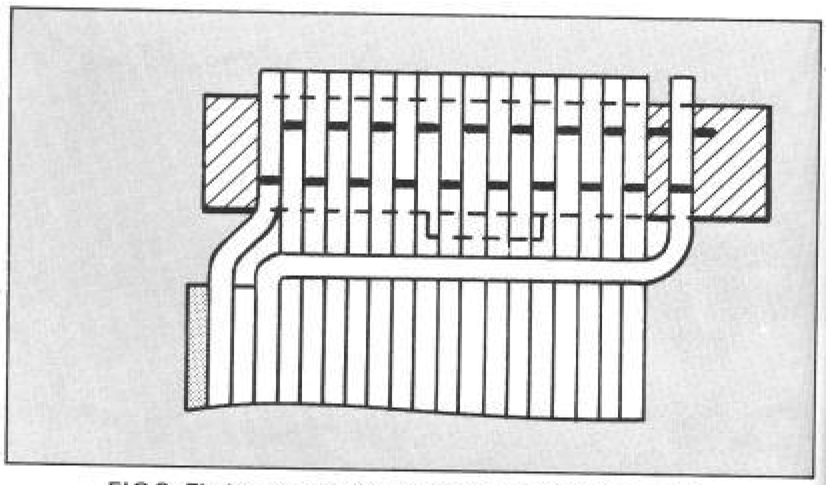


FIG 2. Fitting position for ORIC end of ribbon cable

If you are writing for the BBC, then you won't have to worry about such hassles as special cables . . . the object code is stored on disc as it's assembled on the second pass, and all loaded in and executed when you hit f4.

Right! Now the assembly system had been set up, let's think about games in general.

Knowhow

FOR THE last five years, almost all major new trends in computer gaming have been set by the arcade machine manufacturers, the coin-op companies. Let's face it . . . most of the games available for home computers have been nothing but pallid imitations of the arcade originals. From *Space Invaders* to *Donkey Kong*, the coin-op people made it first.

Recently several software houses (notably Ulitmate and Imagine) have brought out 'original' programs, but even some of these bear more than a little resemblance to their arcade siblings. (*Arcadia*, Eugene?)

Some people see the home computer 'arcade-style' game market dying very soon. They do have a point — to a limited degree. People *will* very quickly tire of buying awful Basic programs packaged in pop art, but I suspect that there will always be a niche in the market for the new, good, fast and slickly balanced arcade-type game . . . a very large niche.

With more memory and faster processors available each year, games are going to become more and more complicated and much more intel-

Continued on page 83



BIG K CALLS IN THE EXPERTS...

General Sir Jeremy Moore, Falklands victor, reviews some electronic kriegspiels...

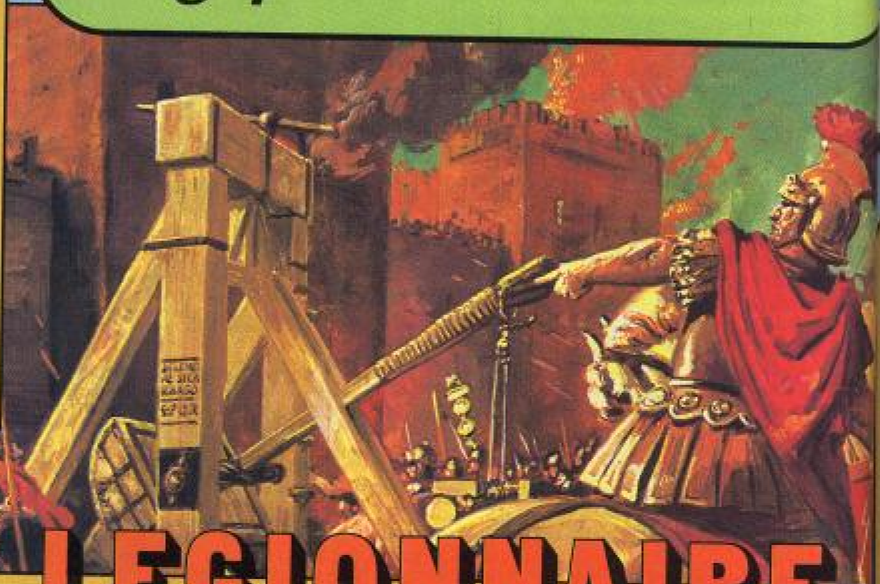
IT'S

MAJOR-GENERAL Sir Jeremy Moore, OBE, MC and Bar, was the Royal Marines amphibious and winter warfare specialist chosen to command the UK Land Forces in the 1982 campaign to retake the Falkland Islands from Argentina. That campaign was hailed as a brilliant and humanitarian use of force in pursuit of a legitimate political objective, and General Moore himself was widely seen as one of its major architects — though, as he is the first to point out, he was assisted in the repossession of the Falkland Islands "by about ten thousand other people", the squaddies and sailors for whom he clearly has the most enormous respect.

It was therefore with some understandable hesitation that we approached him with the idea of asking him to visit BIG K's offices and play — and then review — a few representative computer war games. To our delight he readily agreed, and as a result spent a February afternoon and evening taking on — and trashing, let it be said — the state of the kriegspiel art (so far).

The games we chose to show him were ***Legionaire*** *(Avalon Hill);* ***Stonkers*** *(Imagine);* ***Eastern Front*** *(Atari), and* ***Battle of Normandy*** *(Strategic Simulations): one ROM, two cassettes, and a disc. (We were also planning to show* ***Computer War*** *and* ***Confrontation****, but the former went astray in the post and the latter, by Lothlorien, unfortunately failed to load, despite having run perfectly the previous night. Alas, etc.)*

General Moore tore into each game with a vigour that — we suspect — was not wholly martial. (We think he enjoyed himself.) You can read his comments on each game, as well as one or two other related matters, elsewhere on these pages.



LEGIONNAIRE

(Avalon Hill)

Roman Army grid-system tactical game designed by Chris Crawford. Up to ten legions of varying qualities are matched, in hostile Gaul, against twice the number of barbarians, whose competence or otherwise can also be specified. General Moore started with three legions against six, stood off, from higher ground, a wild cavalry assault, then decoyed and annihilated in detail the remaining hapless Asterixes. It was No Contest.

"Obviously a very simp game and I think a good one start with. The ability to se what the enemy is doing is great help! In real war, on studies the enemy's move-ments at some considerabl length. Another feature was that clearly one's own troops recognise their own side and don't attack them — in some cases I had two or more of my units moving on to the same grid square with no trouble. Which — sadly — doesn't always happen in real life.

"That deals with the realism of the thing. The technology? I'm not qualified to express an opinion, but it seemed very good indeed."

ON THE ETHICS OF IT ALL

"I'm certainly not in favour of glamorising war, because the last thing war is is glamorous. It's sordid and unpleasant. And any game that didn't base itself round the premise that war is both morally wrong and generally undesirable would itself be wrong. Nevertheless, wars do occasionally have to be fought from time to time.

"I don't think any sort of game makes war respectable. As long as it is seen as a game."



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STONKERS (Imagine)

Technically successful transference of the large-format strategic wargame onto one-half of a Spectrum screen. Relatively shallow in content, it nonetheless is visually excellent (for a Spectrum) offering a genuine zoom facility. Scrolling is also available and operationally smooth. General Moore dabbled politely but the game title itself, which for some reason keeps reappearing via a sort of tickertape device, made him visibly restless. He thought his son might enjoy Stonkers.

"You say this is a smaller and cheaper computer? Well 'I'm sure it's very creditable but it's not really in the same class as the others you've shown me. [The line *YOU'VE BEEN STONKING FOR 8 MINUTES* ... comes up on the tickertape.] What's the origin of this word Stonkers? I don't like it very much. I don't think this would hold my attention for long enough though I'm sure my son would like it."



IT'S MAGNIFICENT... BUT IT'S NOT WAR

EASTERN FRONT



(Atari)

Also a Crawford design — in fact it was chosen to illustrate two stages of a single idea — *Eastern Front* has the plotline of *Tigers in the Snow* — i.e. the 1941 German invasion of Russia: Operation Barbarossa.

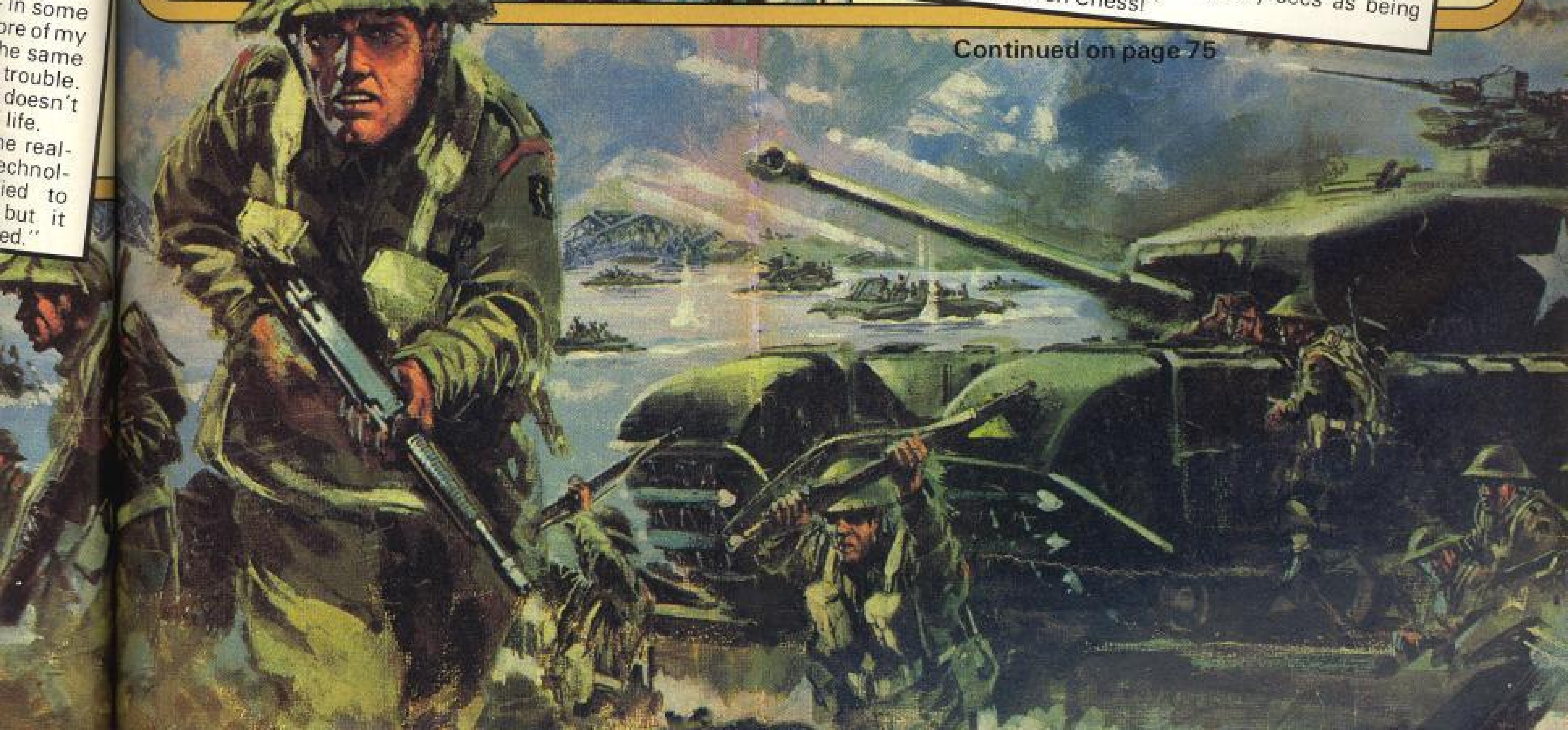
Our guest rapidly grew involved in the easy-to-grasp mechanics of this spectacular game: Guderian-like, he punched massive holes through the massed tanks of the Red Army and drove through the Byelorussian plains towards Moscow. The sound and fury of the action were accompanied by a fascinating commentary on the histori cal event.

"This of course is a move on from the very simple Roman Legion game we began with. Although we only began *Eastern Front* at the Training level and then moved on to the Beginners' level, it had clearly become pretty complicated already. Let alone what it would have been on the highest level. This is not a game that you sit down and do in 20 minutes — you need quite a bit of time. Like a whole weekend, perhaps.

"Realism? It's very difficult to convey the pressure of wartime decision-making without real people at the other end ... their voices on the telephone and so forth.

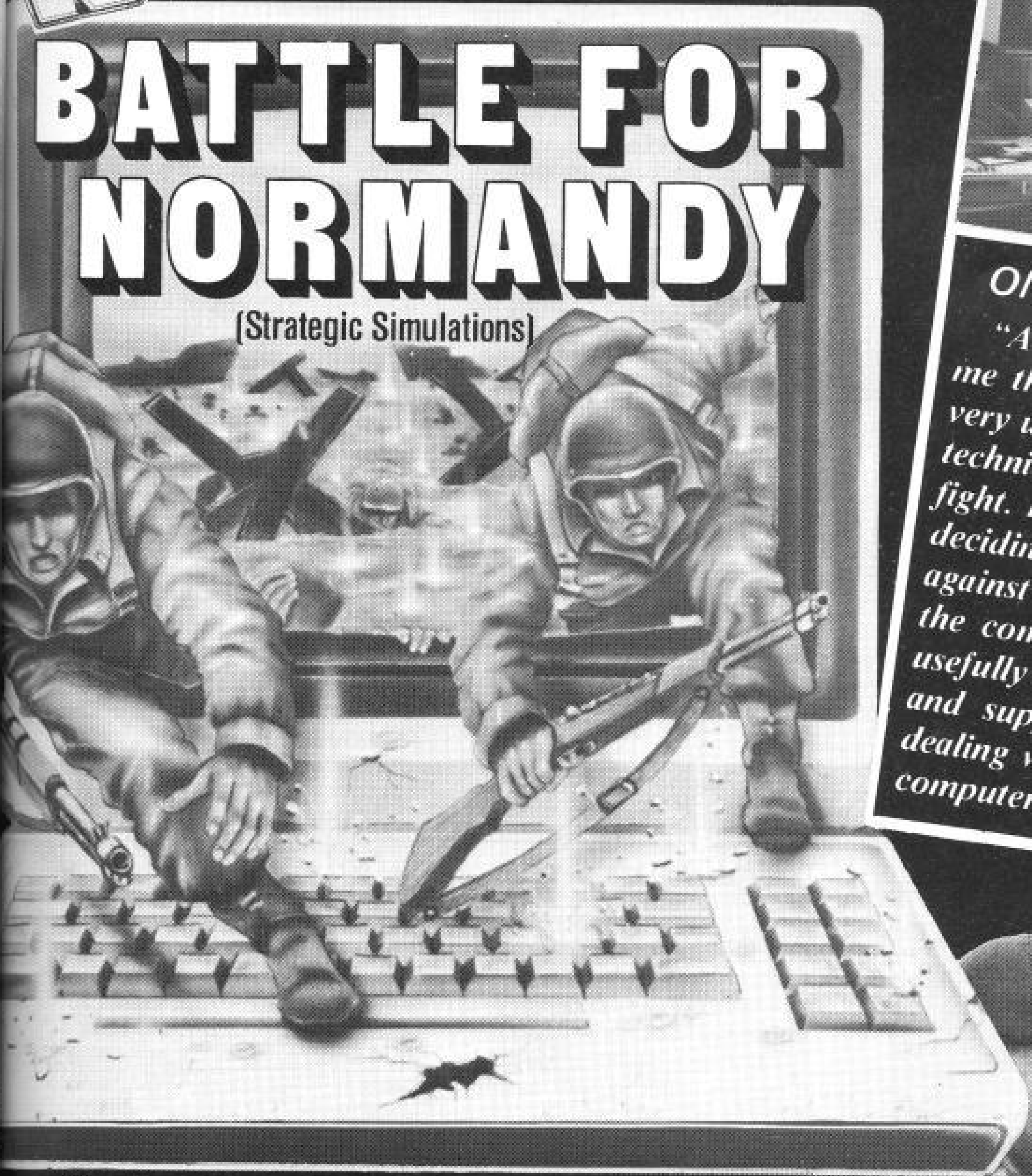
"As for the morality of playing Eastern Front or any other wargame, it's neither more nor less right or wrong to play this rather than *l'Attaque* or various other board games — which I don't think anybody sees as being morally terrible. Even Chess!"

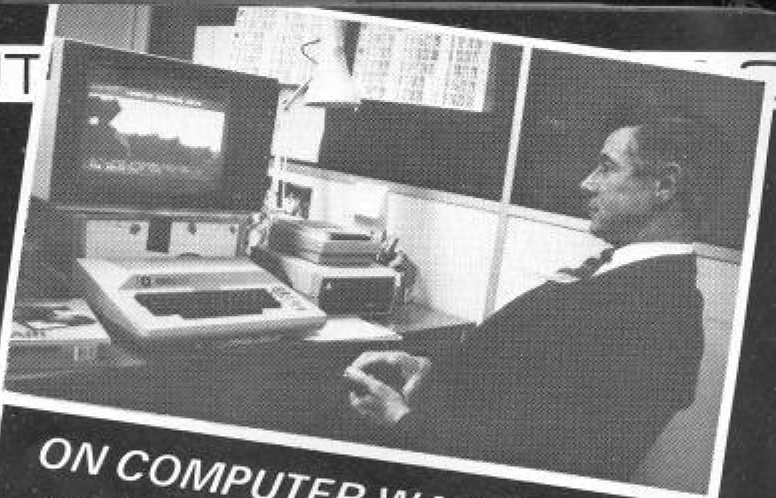
Continued on page 75



BATTLE FOR NORMANDY

(Strategic Simulations)





ON COMPUTER WAR GAMES

"As far as serious study goes, it seems to me that some computer games would be very useful to the professional who's got a technical — indeed, a computer — battle to fight. He can get a lot of value — say, in deciding how his missiles will perform against an opponent's — by reconstructing the combat on computer. You can also usefully use computers to calculate logistics and supply. But the moment you start dealing with people ... there is no way a computer can represent a person."

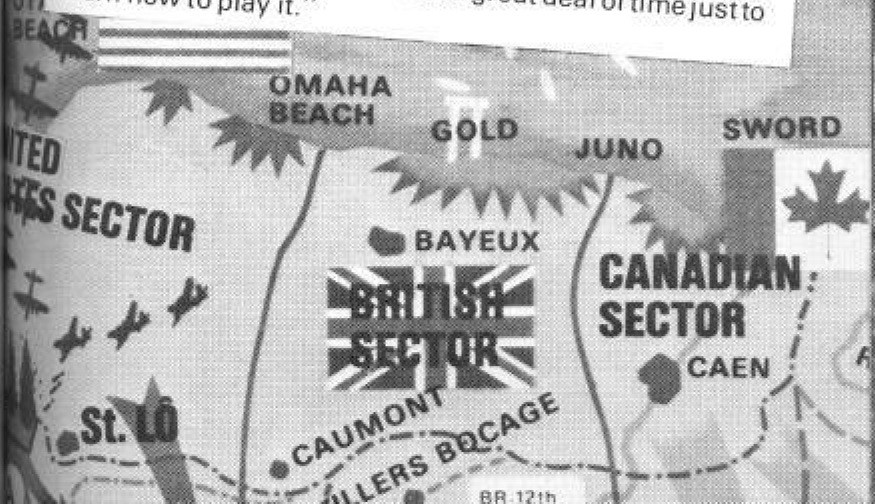


Visually superb but intensely complicated hex-based D-Day simulation which gives you control of virtually every aspect of that giant amphibious operation of war — and therefore of particular interest (we hoped) to an amphibious warfare specialist.

The reviewer was clearly very impressed indeed with this state-of-the-art disc; unfortunately the accompanying documentation, while rich and varied in many non-essential ways, is short on actual play instructions. We had to re-start the game more than once. At the tail end of a five-hour reviewing session we simply could not ask our guest to spend as much time on *Normandy* as he would otherwise have liked. *Normandy,* he told us, came closest of the four to providing anything like a genuine general's eye view.

"It seems very complicated — but we've only been involved in it for a couple of hours and I certainly don't feel well enough into it to e able to make a judgment. Some parts of it would I think be particularly interesting — the planning for D-Day, for example. Once it comes to the actual battle it doesn't become any less enjoyable but it does become less realistic.

"There are really so many factors in *Battle For Normandy* that you would need a great deal of time just to learn how to play it."



PLOTING TO SUCCED

Many computer games depend entirely on good graphics for playability. In addition graphics pure and simple are emerging as the fastest developing form of computer art. In this first of an occasional tutorial series. RICHARD TAYLOR — designer of CRL's ZX81 High Resolution and, more recently, the Fifth games-writing extension to Sinclair BASIC — explains some routines both ancient and modern on the SINCLAIR SPECTRUM.

Want to know how to draw a 3D object on the Spec and then rotate it? Read on, Hackduff...

THE COMPUTER on which this article concentrates is the ZX Spectrum. Programs listed here are, except Listing 8, short and simple and lend themselves well to conversion to other machines. The rest will work equally well on both 16K and 48K machines.

Sinclair BASIC has a rather limited vocabulary of graphic commands — namely PRINT, PLOT, DRAW and CIRCLE. Matters are not helped by the relatively sluggish speed of Sinclair BASIC which makes movement and animation difficult — and nigh impossible if you intend to animate more than a couple of objects simultaneously.

The only real solution to this fundamental problem is to write programs in machine code for the sake of speed. Another possible alternative is to use a faster language, such as FORTH or PASCAL, or to use an extended version of BASIC that is specifically designed to handle animation and movement.

Static

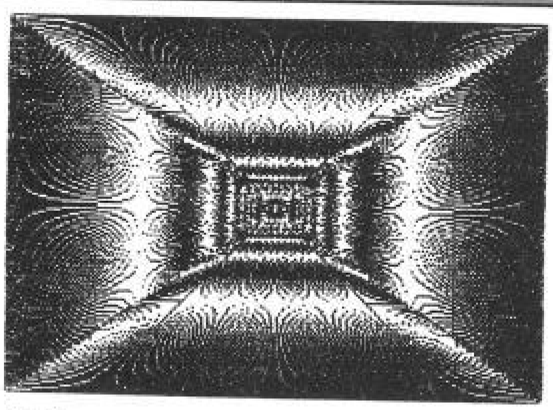
For these reasons I'll concentrate mainly on static displays rather than their animated counterparts. The four commands and the numerous mathematical and graphical functions of Sinclair BASIC represent about the minimal requirement to produce anything worthy of a machine like the Spectrum. A surprisingly small amount of BASIC can often produce quite stunning displays.

Listing 1 illustrates this rather nicely. This six-line BASIC program produces a finely detailed regular pattern which looks quite attractive even without the use of colour. The basic of the program is the drawing of lines in OVER 1 mode. As you will (naturally) recall from chapter 17 of the BASIC manual, OVER alters the behaviour of the graphics commands. Instead of just plotting a pinpoint by making it the ink colour, irrespective of the pixel's previous stake, OVER 1 changes this so that a pixel is set to the ink colour if it was previously the paper colour and the other way about.

Excellent

The use of OVER 1 can produce some quite excellent effects, especially if many lines are drawn in close proximity to one another.

Listing 2 produces a similar sort of pattern but it is circular, rather than the less inspiring rectangular shape. The pattern is created by the effects of lines radiating from the centre of the circle to its circumference, at a one-degree spacing; 360 lines in all. The white area around the centre of the circle is caused by the numerous lines originating from the centre interacting with one another to leave, in the main, just the white paper colour. The whitish areas around the



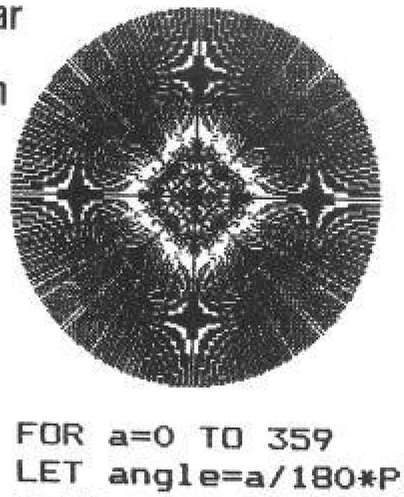
1

Moire Pattern

```
10 FOR a=0 TO 255
20 PLOT a,0:DRAW OVER
1;255-2*a,175
30 NEXT a
40 PLOT 0,a: DRAW OVER
1;255,175-2*a
60 NEXT a
```

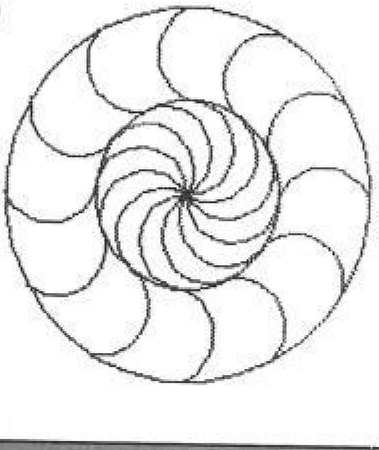
2

Circular Moire Pattern



```
10 FOR a=0 TO 359
20 LET angle=a/180*PI
30 PLOT 128,88
40 DRAW OVER 1;87*COS
angle,87*SIN angle
50 NEXT a
```

3

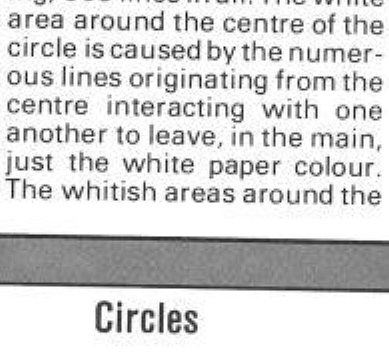


Circles

```
10 CIRCLE
128,88,87: CIRCLE
128,88,44
20 FOR a=0 TO 359
STEP 30
30 PLOT 128,88:
DRAW 44*COS
(a/180*PI),44*SIN
(a/180*PI),PI
40 DRAW 43*COS
(a/180*PI),43*SIN
(a/180*PI),-0.75*
PI
50 NEXT a
```

4 **Rosette**

```
10 PLOT 128,88:
FOR y=0 TO 360
20 LET r=87*SIN
(10*y/180*PI)
30 DRAW 128+r*COS
(y/180*PI)-PEEK
23677,88+r*SIN
(y/180*PI)-PEEK
23678
40 NEXT y
```



edges of the circle is caused by the gaps between the lines drawn from the centre.

A useful advantage of DRAW is the ability to produce curved lines between two points. Listing 3 provides an example of this. You might notice a slight pause preceding the drawing of each curved line. This represents the time used by the computer while it is 'number crunching' in order to work out what the line mathematically looks like; something the computer has to do before it can actually draw the line.

Rosette

Listing 4 produces a sort of rosette shape. The program's slowish speed is a result of the large amount of mathematics that has to be done to produce the shape, especially calculations involving SIN and COS which are not particularly quick executing functions at the best of times. Listing 5 produces a detailed spiral pattern. Again, the large usage of the SIN and COS functions slow down the program considerably.

In both listings 4 and 5 the expressions PEEK 23677 and PEEK 23678 are used. PEEK 23677 simply returns the current x coordinate and PEEK 23678 returns the current y coordinate. These x and y coordinates detail the point from which the DRAW command will draw a line. If you are converting the programs to another machine then you will have to replace these expressions with an equivalent.

The sixth listing is a program which enables you to draw regular polygons — shapes bounded by straight lines of equal length. When RUN, the program will prompt you for the number of sides the polygon should have. Numbers greater than about 20 result in polygons with such short lines that the shape looks more like a circle than a polygon.

Listing 7 also constructs a polygon but this time each point at the end of a line is joined to every point at the end of a line to produce a surprisingly detailed and intricate pattern. This pattern can be easily altered by having polygons with different numbers of sides. Be careful in your selections however as polygons with less than about 5 sides result in simple and uninteresting patterns.

Full 3D

The final program, shown in listing 8, draws what is termed a 'Body of Revolution' in full 3D perspective and then preceeds to rotate it through 360 degrees at a fast rate, using a 'memory eating' animation technique. Unfortunately, this program will only work on the 48K version of the Spectrum. A body of revolution is any 3-dimensional object which can be sliced vertically through its centre at any angle and will result in two identical slices. An example of a body of revolution is a bottle. This property, common to all bodies of revolution, greatly simplifies the entering of the shape into the computer via the keyboard and also simplifies the algorithm used for constructing the object in 3D.

Profile

When the program is RUN you have to build up a profile of the object by entering a sequence of x and y displacements. The y displacement must always be positive but the x displacement can be negative or positive. Basically, the numbers are relative displacements (as used in the DRAW command) from the last point plotted (Initially at the bottom of the middle of the screen) to the end of the line you wish to draw. Although the numbers are only really controlling the right hand side of the screen, a mirror image is automatically drawn by the computer on the left hand side of the screen to help you get a better idea of what the object will look like. If you type 79,0,-60,10,-5,25,50,10,-64,0,200 in reply to the prompts then a suitable 3D object will be produced. In order to be sure that the object will always stay within the boundries of the screen when drawn in 3D, the total width of the object must not exceed 80 pixels and the height is limited to 50 pixels. In this way, you build up the outline of the object.

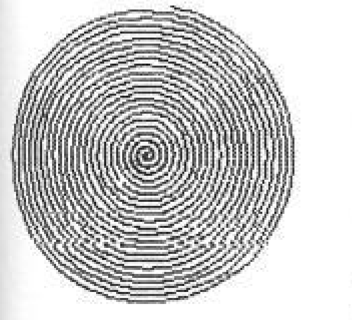
After you have typed 200 in reply to the request for the x displacement, the program continues on into the next stage. Your object is built up on the screen in full 3D perspective eight times. Each time it has been rotated very slightly compared to the previous construction. The progress then proceeds to rotate the object at a quite fast and smooth rate, using a simple but very effective machine code routine. All the machine code does is to recall 4K of screen data back onto the main screen at a very fast rate, making the change apparently instantaneous. There are eight such screens and as each occupies 4K of memory, a full 32K is used for this purpose. This explains why the program will not fit on the 16K machine.

Expanding

Computer graphics is a very wide subject that seems to be rapidly expanding all the time as new uses for graphics are found and new techniques for producing them are discovered. The Spectrum is hardly in the computer graphics league table but, nevertheless, it is capable of some quite advanced and sophisticated work.

Next month: ATARI

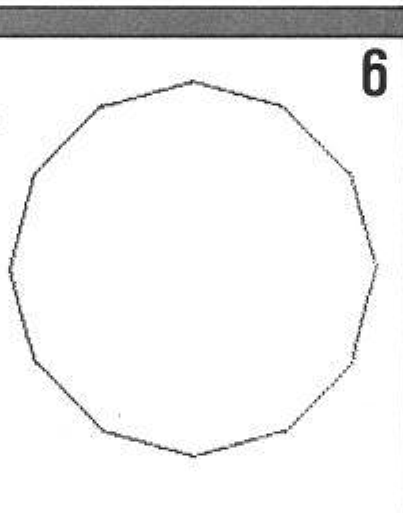
5 Spiral



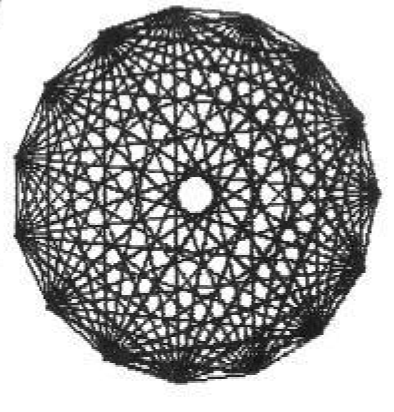
```
10 PLOT 128,88:
FOR y=0 TO 8000
STEP 5
20 LET
r=0.5*(y/180*PI)
30 DRAW
128+r*COS
(y/180*PI) -PEEK
23677,88+r*SIN
(y/180*PI) -PEEK
23678
40 NEXT y
```

6 Polygon

```
10 INPUT "Number
of sides? ";a
20 FOR b=0 TO
359 STEP 360/a
30 LET
x=128+87*COS
(b/180*PI)
40 LET
y=88+87*SIN
(b/180*PI)
50 PLOT x,y: IF
b<>0 THEN DRAW
lastx-x,lasty-y
60 LET lastx=x:
LET lasty=y
70 NEXT b
80 PLOT x,y:
DRAW 215-x,88-y
```



7



```
10 INPUT "Number of
sides? ";a
20 IF a,1 OR a<>INT
a THEN GOTO 10
30 DIM a(a,2): LET
c=1
40 FOR b=0 TO 359
STEP 360/a
50 LET
a(c,1)=128+COS
(b/180*PI)*87
60 LET
a(c,2)=88+SIN
(b/180*PI)*87
70 LET c=c+1: NEXT
b
80 FOR b=1 TO a
90 FOR c=1 TO a
100 PLOT
a(b,1),a(b,2)
110 DRAW
a(c,1)-a(b,1),a(c,2
)-a(b,2)
120 NEXT c
130 NEXT b
```

8

```
  10 CLEAR 30000: PAPER 7: INK 0
: CLS
  20 GO SUB 9000: BORDER 7: LET
i=60
  30 LET is=SIN (i/180*PI)
  40 LET a$=""
  50 LET x=0: LET y=0
  60 PLOT 127,0: PLOT 128,0
  70 INPUT "x displacement (200
to end) ";xx: IF xx=200 THEN GO
TO 1000
  80 IF x+xx<0 OR x+xx>79 THEN G
O TO 70
  90 INPUT "Y displacement ";yy
 100 IF yy<0 THEN GO TO 90
 110 IF yy+y>49 THEN GO TO 90
 120 PLOT 128+x,y: DRAW xx,yy
 130 PLOT 127-x,y: DRAW -xx,yy
 140 LET x=x+xx: LET y=y+yy
 150 LET a$=a$+CHR$ x+CHR$ y
 160 GO TO 70
1000 CLS : DIM a(20,2)
1010 FOR a=0 TO 7
1020 GO SUB 2000
1030 GO SUB 8000
1035 CLS
1040 NEXT a
1050 FOR a=128 TO 240 STEP 16
1060 POKE 30114,a: RANDOMIZE USR
 30112
1070 NEXT a: GO TO 1050
2000 FOR b=1 TO LEN a$ STEP 2
2010 LET x=CODE a$(b)
2030 LET y=CODE a$(b+1)
2040 GO SUB 3000
2060 NEXT b
2070 RETURN
3000 FOR c=0 TO 359 STEP 18
3010 LET d=c+(2.25*a)
3020 IF d>=360 THEN LET d=d-360
3030 LET py=is*y
3040 GO SUB 4000
3050 NEXT c
3055 DRAW bx-xd,by-yd
3060 RETURN
4000 LET yd=SIN (d/180*PI)*x*COS
 (i/180*PI)
4010 LET xd=COS (d/180*PI)*x
4020 LET xd=128+xd: LET yd=90+yd
+py
4030 IF c=0 THEN PLOT xd,yd: LET
 bx=xd: LET by=yd
4040 DRAW xd-PEEK 23677,yd-PEEK
33678
4050 IF b=1 THEN PLOT 128,90: DR
AW xd-128,yd-90: GO TO 4070
4060 PLOT a(1+c/18,1),a(1+c/18,2
): DRAW xd-a(1+c/18,1),yd-a(1+c/
18,2)
4070 LET a(1+c/18,1)=xd
4080 LET a(1+c/18,2)=yd
4090 RETURN
8000 POKE 30102,128+a*16
8010 RANDOMIZE USR 30100
8020 RETURN
9000 RESTORE 9500
9010 FOR a=0 TO 23
9020 READ b: POKE a+30100,b
9030 NEXT a
9040 RETURN
9500 DATA 17,0,0,33,0,64,1,0,16,
237,176,201
9510 DATA 33,0,0,17,0,64,1,0,16,
237,176,201
```

K	= Could Be Better
KK	= Could Be Worse
KKK	= Unsurpassable



THE RHONDDA WAS NEVER LIKE THIS...

Raiders of the lost mine! Your search for those all-elusive power modules (you know the ones) has taken you to the Zoltian mine on the distant planet of Zol 2. Amazingly there's a power module to be had on every level of the complex, and only a few rusting droids to outwit in order to claim your prize. Of course the SF scenario doesn't really disguise the fact that this is just another variant on the old *Panic* game, but it certainly adds a (sort of) logic to the proceedings.

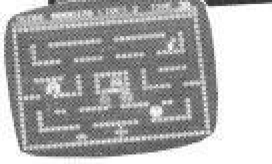
Each level of the mine consists of a number of platforms linked by ladders. The guardian robots are easy to outwit at first. They're not too bright and only patrol one of the platforms. But as you amass modules (curiously they're shaped like top hats!) they become decidely more active. Soon you're desperately clambering up and down ladders and groaning loudly as you're sapped for the umpteenth time. As in the way with *Panic*-style games, you're armed with a shovel (or in this case laser) with which you can dig holes in the platforms. Careful timing will send your clanking pursuers plummeting to a lower level, or conversely you can dig your own escape routes.

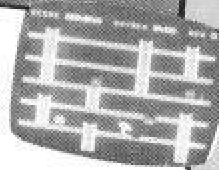
Animation is smooth if uninspired and the action is pleasingly unrelenting. However, I can't help feeling that the thing would have become even more playable had it included a joystick option. Good fun though . . . — **S.K.**

Game: MONSTERS
Maker: SOFTEK
Machine: DRAGON 32
Format: cassette
Price: £6.95
Rating: KK









IT'S MINE — MINE I SAY!

Robot Riot is *Pac Man* in reverse.

The object of the game is to lay mines along the corridors of a robot factory, where the robots are running amok and the 'King Robot' has taken over the control room, not only on your floor but throughout the whole building. Once the total floor area has been mined, the King Robot will try to escape by leaving the control room and you must enter the control room. This ensures that all robots are destroyed on the floor and that you can travel to the next.

Sounds easy? Well, you do have to keep up your energy levels by collecting power mites which are also travelling around the corridors, and different types of robots will either paralyse or kill you if contact is made and more of them appear as time goes on.

As often is the case, the simple games are the best and this game will get the adrenalin flowing and give you plenty of entertainment.

Least original of recent Silversoft releases is *Sam Spade*, a *Panic/Donkey Kong* type game, where you have to run up ladders and dig holes on the various levels to trap the monsters. You then have to bang them on the head with your pickaxe to ensure that they fall to their death. If you leave them trapped for too long they will change colour, making it more difficult to destroy them.

From a programming point of view there is little to criticise. The action flows smoothly and the graphics are fine, and if you do not already possess a similar game then this is as good as the best available. However, it is rather late in the day to come out with this new version no matter how good. — **D.C.**

Game: ROBOT RIOT
Maker: SILVERSOFT
Machine: SPECTRUM 48K
Format: cassette
Price: £5.95
Rating: KK

Game: SAM SPADE
Maker: SILVERSOFT
Machine: SPECTRUM
Format: cassette
Price: £6.95
Rating: K

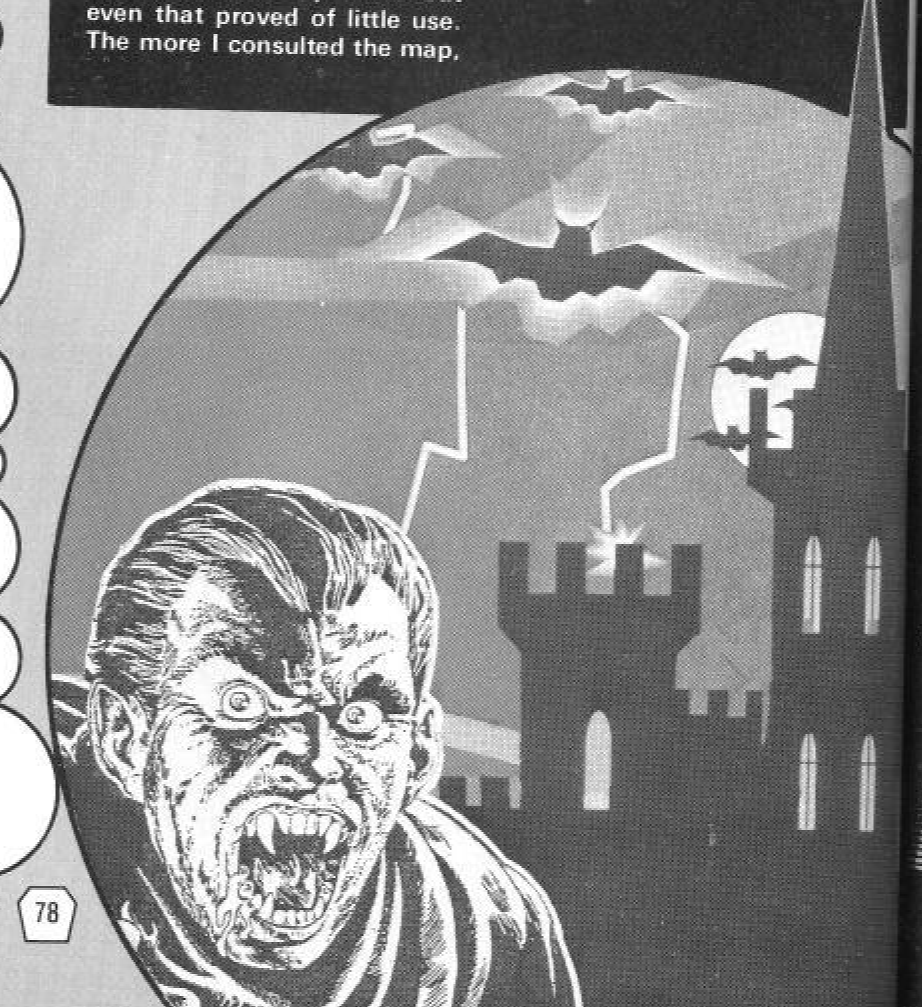
JUST WAIT TILL THE SUN SETS

Ever fancied yourself as a budding Van Helsing? Well if you have this curious blend of maze and adventure games could well be of interest. The idea (of course) is to climb the gloomy tower, despatch the evil count (yes, count) and help yourself to his hard-earned loot. A piece of cake? Not so . . . The tower is all of five storeys high and each level consists of one hundred rooms — all of which look the same. The whole thing is exceptionally confusing.

I, fearless vampire hunter that I am, spent simply hours wandering aimlessly around the dungeon (level one) just trying to find the exit. Level One is supposed to be the easiest floor and consequently has no objects to be found or obstacles to overcome. The result is a quite tedious trek that all but destroys your enthusiasm for the game. There's a HELP feature which enables you to consult a map and so orientate yourself but even that proved of little use. The more I consulted the map, the further I seemed to get from the exit. Perhaps I was walking backwards? Anyway once past the first floor things begin to look up. There are daggers and magic apples to be found, as well as patrolling vampire bats to avoid.

Having negotiated all five levels you will finally come face to fang with the vampire lord. Only one of the weapons you'll have collected will kill him — so choose wisely. The game features a SAVE routine which is invaluable if you don't want to end up back on level one and the audio visuals are, if not spectacular, at least adequate. Happy hunting! — **S.K.**

Game: TRANSYLVANIAN TOWER
Maker: RICHARD SHEPHERD SOFTWARE
Machine: DRAGON 32
Format: cassette
Price: £6.50
Rating: KK



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ligent — and much more fun to play. Games will have to be written by teams more often, since one poor programmer won't be able to keep track of all the factors in a 100K program.

So? The point is, the home computer programming market is big enough for original product authors, the 'One Man Band' people who can get good product out quickly, but who have to be genius-types; and the less original but still efficient programmers who can be integrated into a team structure, leaving the difficult new ideas to creative person within the group. The market will rapidly squeeze out the 100-line Basic games and other sorts of rushed garbage.

One thing is certain: the Mega-programs of tomorrow won't just be text. Somewhere along the line someone will want to put that half-megabyte of memory to good use controlling graphics: moving graphics. And if you want a job in the games programming side of things, you had better know how.

That said, you still have to start somewhere. No-one starts off knowing Assembly Code . . . almost everybody starts with Basic. Learning Assembly Code is a kind of 'First Great Test', like the Spartans leaving newborn babies on a hillside for the night, the idea being if you make it through that, you can make it through anything. If you learn it fluently and become conversant with the way computers are structured, then chances are you've enough determination to be a good games programmer.

Stubborn

You'll need that degree of determination or stubborness because only around 30 per cent of the time spent making a game is actually writing the code: the rest is debugging the accursed chunk you've just typed in. This (not surprisingly) can get very, very boring. A good idea is to see the bug as a battle against you and the computer, and maybe to get a little angry, because you are going to need adrenalin to keep you going at two in the morning. This way, when you finally suss the error, you've a small victory; something to feel good about while you do the next bit. Without these little moments of infantile excitment, programming would rapidly degenerate into tedious monotony.

However, use of this trick has its unfortunate side, because after a while some programmers become so full of their petty achievements against the machine they are of little use to anything but the computer! This type of person won't listen to any criticism be it constructive or otherwise, a dangerous position to be in.

The moral of the story is — don't treat people like programs — they don't like it.

I wish this wasn't true, but it is: the one biggest thing that goes towards making a game really successful is the advertising. There it is. If you are after the real money and fame stick to the big boys. If you want to be able to recognise your own game from its advertisements then don't.

Coder

THIS SERIES is going to assume you are already proficient at assembly code on the BBC micro, but are overwhelmed by the thought of applying your knowledge to much more than filling the screen with stars etc. (Yes, we've all been there, I think!)

I considered every line of code I write with an explanation, but this will bore most of you to distraction and probably confuse the rest. To this end, if you see something in a program you don't understand, type it in, see what it does, and try find out what each instruction in the program does towards what the whole thing achieves. If this fails, write me a letter.

PARTS LIST:

2 x 20-way IDC sockets
1 metre of 20-way ribbon cable

Right: to business. The single most important routine in your mega-game is going to be the shape generator routine, since the shapes are what everybody is looking at!

Think about it . . . every arcade game you've ever seen can be boiled down into a number of 'shapes' moving on the screen and things happening when they collide. Sure, there are other rules, like the movement patterns of each shape which go to make each game unique.

So, it's important to get some nice looking blocks of colour in there! From now on I'll refer to these shapes, e.g., the base in *Space Invaders* as meta-shapes or Mshapes.

Next month I'll be presenting two meta-shape creation utilities. Both run on the BBC, one creating Mshapes to work on the BBC itself and the other creating Mshapes that will work on the Oric. There'll also be the first piece of source code for 'spraying' any Mshape anywhere on the BBC or Oric screen, really fast. There'll also be the secret of 'smooth-moov' graphics revealed and the first part of the example game, *Maelstrom*.

```
2CLEAR:?&FE60=&FF:?&FE6C=(?&FE6C)OR1
6:?&FE62=&FF:?&FE60=&FF
3HIMEM=&67FF:LOMEM=&4400
80START=&5F:FIN=&61:D%=&A10
100FORY%=0TO3STEP2:P%=D%:[OPTY%
210.TROUT SEI
220.X0 LDA#0:JSR SEND:LDA&70:JSRSEND:L
DA&71:JSRSEND:LDA&72:JSRSEND:LDA&73:JSR
SEND:LDY#0
230.X1 LDA(&74),Y:JSRSEND:INC&74:BNEP%
+4:INC&75:INC&70:BNE X2:INC&71
240.X2 LDA&71:CMP&73:BNE X1:LDA&70:CMP
&72:BNE X1:CLI:RTS
250.SEND TAX:LDA#16:.SE1 BIT&FE6D:BEQS
E1:STX&FE60:LDA#&CE:STA&FE6C:LDA#&EE:STA
&FE6C:RTS
270:]:NEXT
300MODE7:PRINT'"Now assembling:";Y%=4
305P%=&600:L%=P%:W%=1
310FILE$=" EXAMPL*"
320A$=MID$(FILE$,W%,7):IFA$="*"THEN360
321IFLEFT$(A$,1)="+" AND (Y%=6)THENW%=
W%+7:GOTO320
325A$=RIGHT$(A$,6):PRINTTAB(0,2+W%/7);
A$;" Pass ";-(Y%<>4)+1;:W%=W%+7:OSCLI "L
OAD "+A$+" 1E00":O%=&6800:PAGE=&1E00:GOT
O10
350PRINTTAB(30,0);~O%:IFY%=6THENPRINTT
AB(15,1+W%/7);"Sending";:?&70=L% MOD256:
?&71=L%DIV256:?&72=(P%AND255):?&73=(P%DI
V255):?&74=0:?&75=&68:L%=P%:CALLTROUT:GO
TO320
355GOTO320
360IFY%=4THENY%=6:GOTO305
520A%=1:CALLSEND:A=INKEY(10):?&FE62=0:
PRINTTAB(0,12);"Done"
```

FIG 3. New ORIC 'A' program

```
90REM ORIC DOWNLOADER CREATOR
100DATA120,169,0,141,3,3,169,247,141,2
,3,169,221,141,12,3,162,0,189,112
110DATA151,157,128,187,232,201,48,208,
245,32,91,151,201,1,240,48,32,91,151
120DATA133,2,32,91,151,133,3,32,91,151
,133,4,32,91,151,133,5,238,152,187
130DATA32,91,151,145,2,230,2,208,2,230
,3,165,2,197,4,208,239,165,3,197,5
140DATA208,233,240,201,169,255,141,3,3
,88,96,169,175,141,0,3,169,191,141
150DATA0,3,169,2,44,13,3,240,251,173,1
,3,96,68,111,119,110,108,111,97,100
160DATA105,110,103,32,67,111,100,101,3
2,66,108,111,99,107,58,32,48
170Z=0:FORT=0TO#88:READA:POKE#9700+T,A
:Z=Z+A:NEXT
180IFZ<>14666THENPRINT"Error in data s
tatements"
```

FIG 4. Program to create the ORIC/ATMOS downloader at &9700

COUNT

runs on COMMODORE 64 with joystick

```
0 JB=54272:GOSUB 9000
1 PRINT"[CLEAR,YELLOW]"
5 POKE 53280,0:POKE 53281,0
10 REM ***  SURROUND ***
20 DIM X(4),Y(4),C(4),D(11)
30 FOR I=1 TO 4:READ X(I),Y(I),C(I)
   :NEXT
40 FOR I=0 TO 11:READ D(I):NEXT
50 FOR I=1 TO 6*40:P$=P$+"■":NEXT
60 UL=102:CL=160:F=40:P=86:Z=0:MX=39
   :MY=24
70 US=Z:CS=Z:W=.96:V=1:L=2:R=3:U=4
   :S=1024
80 PRINT"[CLEAR]DO YOU WANT INSTRUCTI
   ONS";
82 GET A$:IF A$=""THEN 82
85 IF LEFT$(A$,V)<>"Y"THEN 100
86 PRINT
90 GOSUB 60000
100 PRINT:INPUT"[DOWN]WANT A FAST,
   MEDIUM, OR SLOW GAME";A$
150 A$=LEFT$(A$,V)
160 TL=40
170 IF A$="F"THEN TL=Z
180 IF A$="M"THEN TL=20
200 GOSUB 10000
220 T=RND(-TI)
240 UD=3:CD=2:C=0
260 UX=10:UY=7:CX=29:CY=17
270 UA=S+UX+F*UY:CA=S+CX+F*CY
500 REM GETA$
501 BJ=PEEK(56320):IF BJ=127 THEN A$=
   ""
502 IF BJ=123 THEN A$="4"
503 IF BJ=119 THEN A$="6"
504 IF BJ=126 THEN A$="8"
505 IF BJ=125 THEN A$="2"
520 IF A$<"2"OR A$>"8"THEN 600
530 D=(ASC(A$)-48)/L
550 IF INT(D)<>D THEN 600
570 UD=D
600 GOSUB 7000
660 IF PEEK(A)<>P THEN C=C+V
750 POKE UA,UL:POKE UA+JB,13
760 POKE A,C(UD):POKE A+JB,8
800 UA=A:UX=X:UY=Y
1000 TZ=TI
1030 GOSUB 7100:B=A:GOSUB 7010
1060 IF((PEEK(B)AND PEEK(A))=P)AND(RN
   D(V)<W)THEN 1600
1080 T=INT(L*RND(V))+R*(CD-V)
1090 H=D(T):G=D(T+V)
1110 GOSUB 7120:B=A:GOSUB 7020
1130 IF(PEEK(B)AND PEEK(A))=P THEN 15
   90
1140 IF H<>G THEN H=G:GOTO 1110
1300 GOSUB 7010
1320 IF PEEK(A)=P THEN 1600
1400 T=INT(L*RND(V))+R*(CD-V)
1420 H=D(T):G=D(T+V)
1460 GOSUB 7020
1470 IF PEEK(A)=P THEN 1590
1480 IF H<>G THEN H=G:GOTO 1460
1590 CD=H
1600 IF PEEK(A)<>P THEN C=C+L
1750 POKE CA,CL:POKE CA+JB,15
1760 POKE A,C(CD):POKE A+JB,4
1800 CA=A:CX=X:CY=Y
2000 IF C>Z THEN 5000
2020 IF TI-TZ<TL THEN 2020
2040 GOTO 500
5000 PRINT"[HOME,RVS] ";
5005 IF C>V THEN 5200
5030 CS=CS+1
5040 PRINT"Y O U";
5050 GOTO 5600
```



You are the Chief Sap (i.e. [illegible]) of a small besieged mediae[illegible] town. Outside, the swarming hordes [illegible] the black [illegible] under your walls [illegible] them down on your head. Your task? To dig faster and [illegible] off their tunnel with your tunnel.

Just don't dig into the walls of your own shaft...

Sap on!

ILLUSTRATION: ROBIN SMITH

TERMINE

by JONATHAN BULL



```
5200 IF C>L THEN 5400
5230 US=US+1
5240 PRINT"6 4 .";
5250 GOTO 5600
5400 US=US+V:CS=CS+V
5420 POKE A,214
5440 PRINT"B O T H";
5600 PRINT"   C R A S H E D ! "
5610 PRINT"                  [LEFT15]
   YOU="US;"64.="CS
5620 FOR I=1 TO 10:GET A$:NEXT
5630 GET A$:IF A$=""THEN 5630
5640 GOTO 150
7000 X=UX:Y=UY:D=UD:GOTO 8000
7010 X=CX:Y=CY:D=CD:GOTO 8000
7020 X=CX:Y=CY:D=H:GOTO 8000
7100 X=CX+X(CD):Y=CY+Y(CD):D=CD
   :GOTO 8000
7120 X=CX+X(H):Y=CY+Y(H):D=H:GOTO 8000
8000 X=X+X(D):Y=Y+Y(D)
8010 IF X<Z THEN X=MX
8020 IF X>MX THEN X=Z
8030 IF Y<Z THEN Y=MY
8040 IF Y>MY THEN Y=Z
8050 A=S+X+F*Y
8100 RETURN
9000 POKE 53280,10:POKE 53281,10
   :PRINT"[CLEAR]";:GOSUB 9100
   :PRINT"[HOME,DOWN13,BLACK]";
9001 A$="▚▚▚▚"
9002 FOR N=1 TO LEN(A$)
   :PR$=MID$(A$,N,1):IF PR$="▚"THEN P
   R$="[RVS] [RVOFF]"
9003 GOSUB 9160:PRINT PR$;:NEXT N
9004 A$="▚▚▚[UP,LEFT]▚[UP,LEFT]▚
   [LEFT2]▚[LEFT2]▚[UP,LEFT]▚[UP,LEFT]
   ▚▚▚▚[DOWN]▚[DOWN,LEFT]▚[DOWN,LEFT]
   ▚[DOWN,LEFT]▚▚▚[UP,LEFT]▚[UP,LEFT]
   ▚[UP,LEFT]▚[UP,LEFT]▚▚▚[DOWN,LEFT]
   ▚[DOWN,LEFT]▚[DOWN,LEFT]▚[DOWN,
   LEFT]▚[UP,LEFT]▚[UP,LEFT]▚▚[LEFT]
9005 FOR N=1 TO LEN(A$)
   :PR$=MID$(A$,N,1):IF PR$="▚"THEN P
   R$="[RVS] [RVOFF]"
9006 GOSUB 9160:PRINT PR$;:NEXT N
9010 A$="[LEFT,UP]▚[UP,LEFT]▚▚▚[DOWN,
   LEFT]▚[DOWN,LEFT]▚[DOWN,LEFT]▚
   [DOWN]▚▚[UP,LEFT]▚[UP,LEFT]▚▚[UP,
   LEFT2]▚[UP,LEFT]▚▚▚[DOWN,LEFT]▚
   [DOWN,LEFT]▚[DOWN,LEFT]▚[DOWN]
   ▚▚▚▚▚[UP,LEFT]▚[UP,LEFT]▚[UP,LEFT]
   ▚[UP,LEFT]▚"
9015 FOR N=1 TO LEN(A$)
   :PR$=MID$(A$,N,1):IF PR$="▚"THEN P
   R$="[RVS] [RVOFF]"
9016 GOSUB 9160:PRINT PR$;:NEXT N
9020 A$="[LEFT]▚[LEFT2]▚[LEFT2]▚
   [LEFT2]▚[LEFT,DOWN]▚[LEFT,DOWN]▚
   [LEFT,DOWN]▚[DOWN]▚▚▚▚▚"
9025 FOR N=1 TO LEN(A$)
   :PR$=MID$(A$,N,1):IF PR$="▚"THEN P
   R$="[RVS] [RVOFF]"
9026 GOSUB 9160:PRINT PR$;:NEXT N
9030 A$="[UP,LEFT]▚[UP,LEFT]▚[UP,LEFT]
   ▚[UP,LEFT]▚▚▚▚[DOWN,LEFT]▚[DOWN,
   LEFT]▚[DOWN,LEFT]▚[DOWN,LEFT]▚▚▚▚▚
   [LEFT2,UP,LEFT]▚[UP,LEFT]▚[UP,LEFT]
   ▚[UP,LEFT]▚▚▚[DOWN]▚[DOWN,LEFT]▚
   [DOWN,LEFT]▚"
9035 FOR N=1 TO LEN(A$)
   :PR$=MID$(A$,N,1):IF PR$="▚"THEN P
   R$="[RVS] [RVOFF]"
9036 GOSUB 9160:PRINT PR$;:NEXT N
9050 A$="[UP]▚▚▚▚▚▚"
9055 FOR N=1 TO LEN(A$)
   :PR$=MID$(A$,N,1):IF PR$="▚"THEN P
```

Continued on next page

COUNTERMINE

```
   R$="[RVS] [RVOFF]"
9056 GOSUB 9160:PRINT PR$;:NEXT N
9099 GOSUB 9165:GOSUB 9200
   :FOR T=1 TO 1000:NEXT
   :PRINT"[YELLOW]":RETURN
9100 PRINT"[HOME,DOWN16,RIGHT9]
          [BLACK] [BLUE] [BLACK]
   [RVS]
9110 PRINT"[RIGHT9]             [RVS,BLUE]
       [RVOFF,BLACK]
9120 PRINT"[RIGHT9]             [BLUE,RVS]
    [BLUE] [BLUE] [RVOFF,BLACK]
9130 PRINT"[RIGHT9]           [RVS,BLUE]
         [RVOFF]
9140 PRINT"[RIGHT9]
9150 PRINT"[RIGHT9,BLACK]
9155 RETURN
9160 RETURN
9165 BJ(1)=252:BJ(2)=236:BJ(3)=251
   :BJ(4)=254:A=0:POKE 1761+JB,15
   :POKE 1763+JB,15
9170 FOR N=1 TO 5:FOR A=1 TO 4
   :POKE 1761,BJ(A):POKE 1763,BJ(A)
   :FOR T=1 TO 150:NEXT T
9180 NEXT A:NEXT N:RETURN
9200 FOR N=1024 TO 1024+24:POKE N,42
   :POKE N+JB,0:POKE N-1,32
   :FOR T=1 TO 200:NEXT T:NEXT N
9203 POKE 1761,BJ(1):POKE 1763,BJ(1)
9205 N=N+40
9210 FOR T=N-1 TO N+(40*10)-1 STEP 40
   :POKE T,21:POKE T+JB,1
   :IF PEEK(T-40)<>42 THEN POKE T-40,
   32
9220 FOR A=1 TO 150:NEXT A:NEXT T
9230 N=N-40:FOR T=N TO N+14:POKE T,42
   :POKE T+JB,0:POKE T-1,32
   :FOR A=1 TO 200:NEXT A:NEXT T
9250 POKE T-1,32:RETURN
10000 REM DRAW BOUNDARY
10010 PRINT"[CLEAR,BLUE]";P$;P$;P$;P$;
   LEFT$(P$,MX)"[LEFT,INST] [RVOFF,
   GREEN]";
10100 RETURN
50000 DATA 0,1,22,-1,0,60,1,0,62,0,-1,
   30
50100 DATA 3,2,3,4,1,4,4,1,4,2,3,2
60000 PRINT"[CLEAR]    [RVS]
   W R A P   A R O U N D   T R A P "
60010 PRINT"[DOWN]      THE OBJECT OF
   THE GAME IS TO TRAP"
60020 PRINT"THE COMPUTER.  YOUR WALL
   MAKER STARTS IN";
60025 PRINT"THE UPPER LEFT PART OF TH
   E SCREEN.";
60030 PRINT"  YOU CONTROL IT I S MOTI
   ON WI THE JOYSTICK (IN PORT 2)
60040 PRINT"
      "
60045 K=19
60060 PRINT"[DOWN3]TO START GAME TYPE
    ANY KEY OR"
60070 PRINT"TYPE [RVS]F[RVOFF]
    FOR  FAST  GAME"
60080 PRINT"      [RVS]M[RVOFF]
    FOR MEDIUM GAME"
60090 PRINT"      [RVS]S[RVOFF]
    FOR  SLOW  GAME"
60200 RETURN
```

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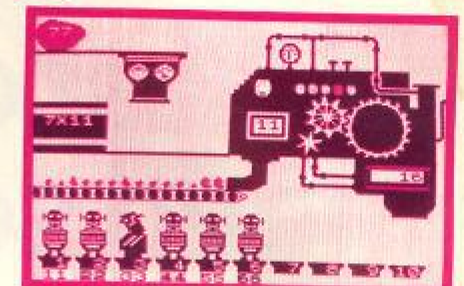
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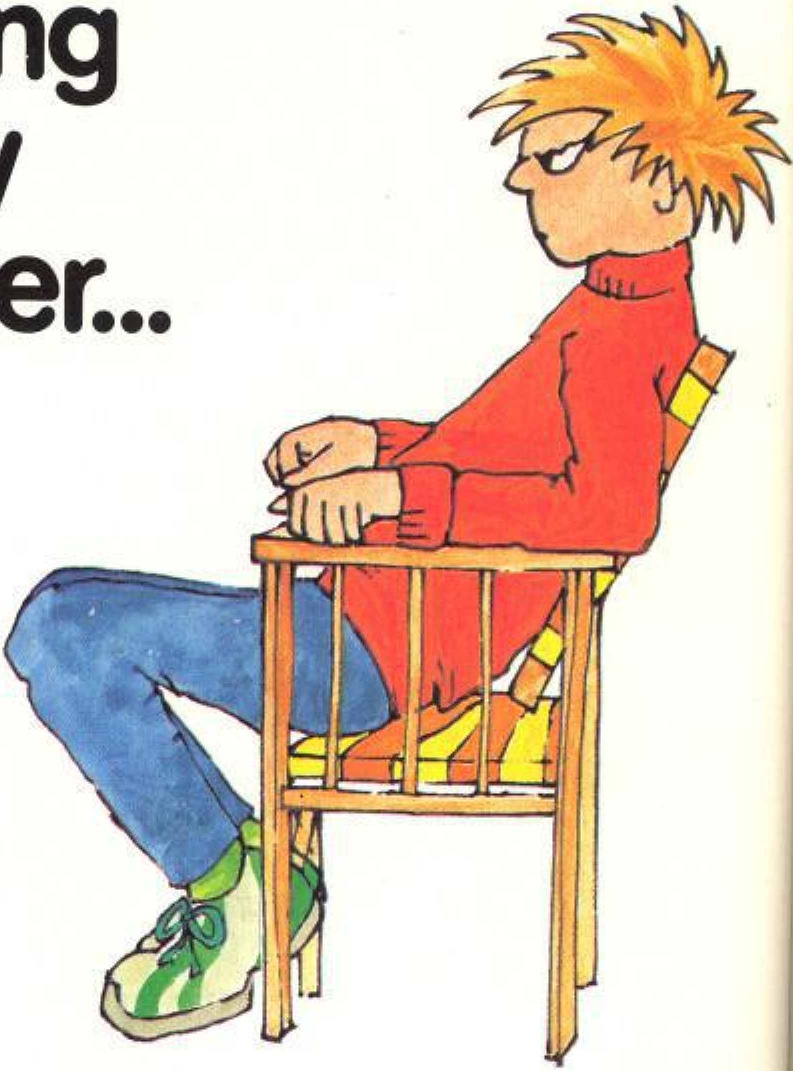
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Graphics	*100%*
Overall score	*100%*

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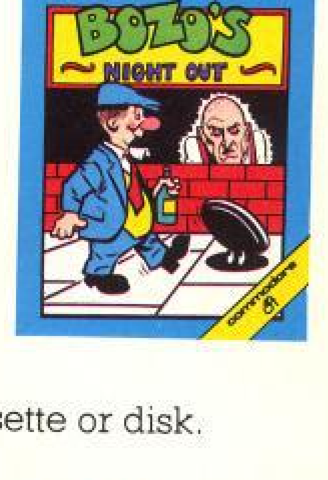
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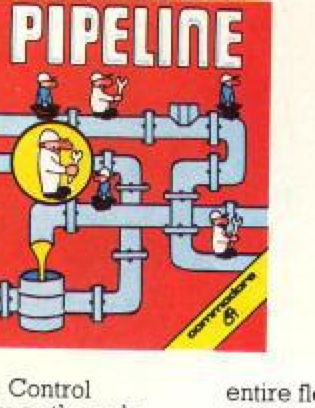
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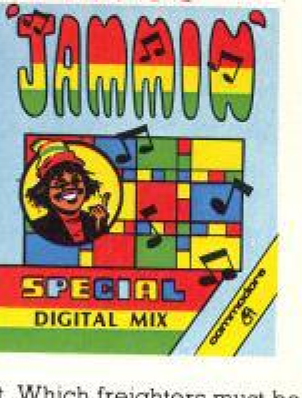
SUPER PIPELINE

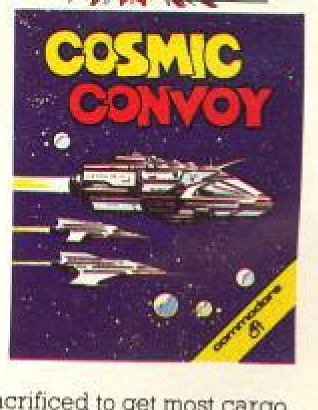
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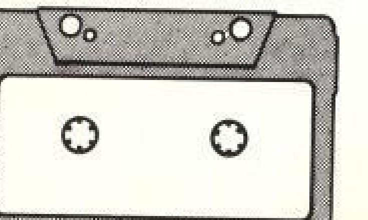
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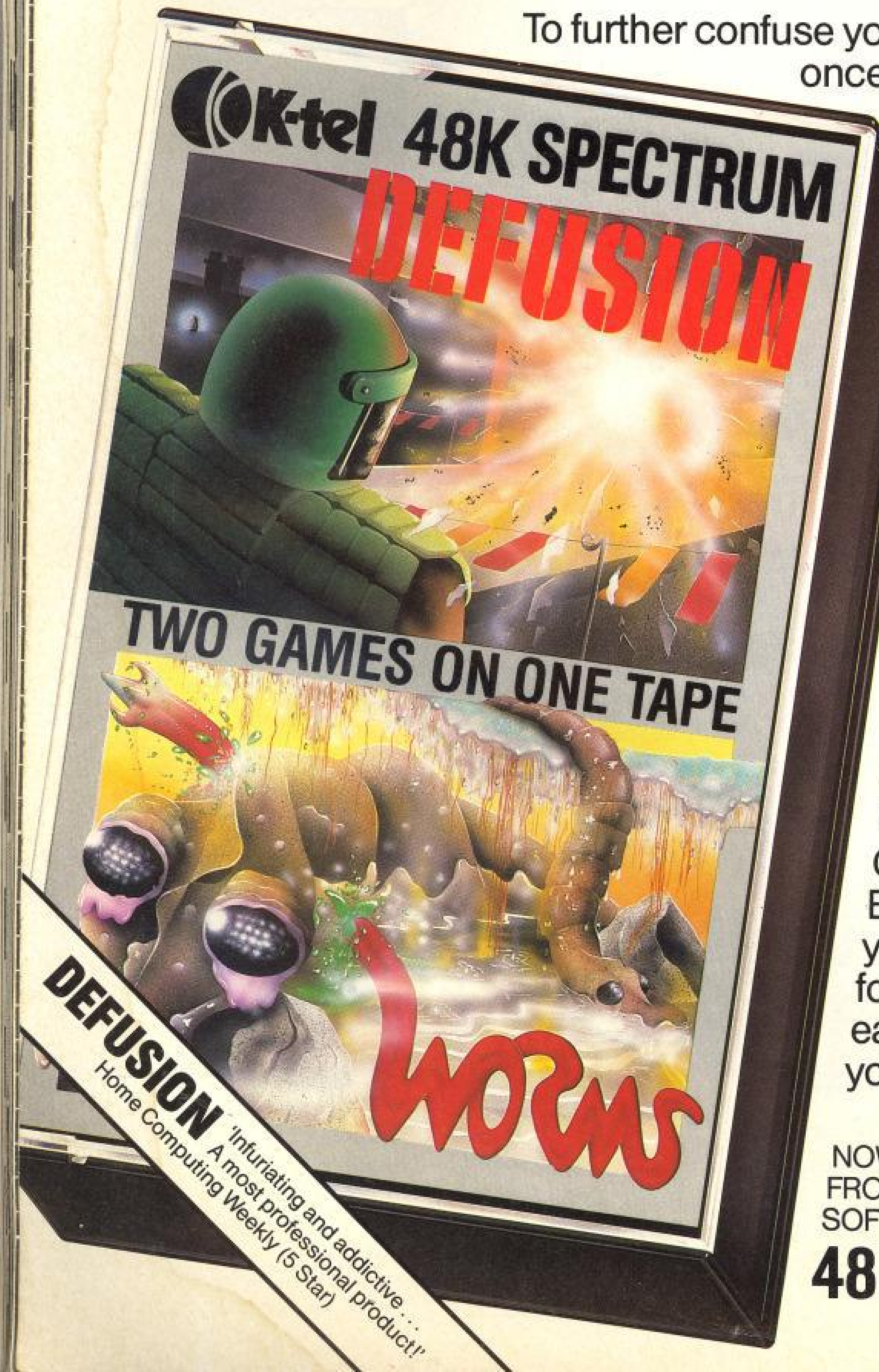
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